

DOCUMENT RESUME

ED 250 567

CE 040 150

AUTHOR Patton, Bob; Harp, Keith
TITLE Vocational Agriculture I.
INSTITUTION Oklahoma State Board of Vocational and Technical Education, Stillwater. Curriculum and Instructional Materials Center.
PUB DATE 84
NOTE 1,369p.; Document is printed on colored paper.
AVAILABLE FROM Curriculum and Instructional Materials Center, Oklahoma State Board of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, OK 74074 (Teacher Edition: \$8.75 In-State, \$15.75 Out-of-State; Student Edition: \$8.25 In-State, \$15.00 Out-of-State).
PUB TYPE Guides - Classroom Use - Guides (For Teachers) (052)
EDRS PRICE MF11 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Agricultural Education; Agricultural Engineering; Agricultural Machinery; *Agricultural Production; Agricultural Safety; Agricultural Skills; Agriculture; *Agronomy; *Animal Husbandry; Behavioral Objectives; Classroom Techniques; Course Content; Farm Management; Farm Occupations; High Schools; Leadership Qualities; Learning Activities; Postsecondary Education; Recordkeeping; Safety; Student Organizations; Supervised Farm Practice; Teaching Methods; Test Items; Transparencies; Units of Study; *Vocational Education; Work Experience Programs
IDENTIFIERS Future Farmers of America

ABSTRACT

These course materials are designed to provide a foundation of basic knowledge in production agriculture as a prelude to further education in vocational agriculture. The guide contains 6 sections and 22 units of instruction. Each unit includes all or most of eight basic components: performance objectives, suggested activities for the teacher, information sheets, assignment sheets, job sheets, transparency masters, tests, and answers to tests and assignment sheets. All of the unit components focus on measurable and observable learning outcomes. Units of instruction are designed for use in more than one lesson or class period. The following topics are covered in this course: orientation to vocational agriculture; agricultural safety; leadership--Future Farmers of America (FFA), parliamentary procedure, making a group presentation, supervised occupational experience programs, recordkeeping transactions, inventories and net worth, orientation to FFA recordkeeping, depreciation, closing procedures; animal science--the livestock industry, beef breeds and selection, swine breeds and selection, sheep breeds and selection, dairy breeds and selection, horse breeds and selection; plant science; and agricultural mechanics--orientation and safety, arc welding, metalwork, and oxy-gas cutting. (KC)

ED250567

OK 84/3301

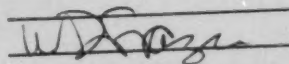
VOCATIONAL AGRICULTURE I

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☒ This document has been reproduced as
received from the person or organization
originating it.
☐ Minor changes have been made to improve
reproduction quality.

• Points of view or opinions stated in this docu-
ment do not necessarily represent official NIE
position or policy.

"PERMISSION TO REPRODUCE THIS
MATERIAL IN MICROFICHE ONLY
HAS BEEN GRANTED BY



TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

OK 84/3301

CE00150

Vocational Agriculture I

Written by
Bob Patton, Coordinator
Curriculum and Instructional Materials Center

Keith Harp, Vocational Agriculture Curriculum Specialist
Curriculum and Instructional Materials Center

Coordinated by
Joyce Sawatzky, Assistant Coordinator
Curriculum and Instructional Materials Center

Developed by the
Curriculum and Instructional Materials Center
For the Division of Vocational Agriculture
Ralph Dreessen, State Supervisor
Oklahoma State Board of Vocational and Technical Education
Leslie Fisher, Chairman
Francis T. Tuttle, Director
Bob Patton, Coordinator, Curriculum and Instructional Materials Center
1984

Copyright 1984
State Department of Vocational and Technical Education
Curriculum and Instructional Materials Center

All rights reserved.

Printed in the United States of America by the
State Department of Vocational and Technical Education
Stillwater, Oklahoma 74074

This publication, or parts thereof, may not be reproduced in any form by photographic, electrostatic, mechanical, or any other method, for any use, including information storage and retrieval, without written permission from the publisher.

Use of commercial products in these instructional materials does not imply endorsement by the Oklahoma State Department of Vocational and Technical Education.

The Oklahoma State Department of Vocational and Technical Education does not discriminate on the basis of race, creed, color, national origin, sex, age, veteran status, or qualified handicap.

FOREWORD

The American farmer is experiencing turbulent times. As vocational and technical educators, we are responsible for designing and carrying out training programs to help future farmers cope with the uncertainties associated with agriculture. Furthermore, we find it more essential than ever before to prepare future farmers to face the realities of producing food and fiber that the American consumer can purchase for a fair market price while at the same time allowing for a profit.

Students studying vocational agriculture will be the farmers of tomorrow. The foundation for that career can be found in *Vocational Agriculture I*. We are excited with the subject matter and its organization in this publication. When the materials are properly implemented, the vocational agriculture student will be provided with the appropriate foundation for future studies in production agriculture and agribusiness.

Francis Tuttle, Director
Oklahoma State Department of
Vocational and Technical Education

Ralph Dreessen, State Supervisor
Trade and Industrial Education
Oklahoma State Department of
Vocational and Technical Education

VOCATIONAL AGRICULTURE I

TABLE OF CONTENTS

SECTION A — ORIENTATION

Unit I	Orientation to Vocational Agriculture	1-A
Unit II	Agricultural Safety	41-A

SECTION B — LEADERSHIP

Unit I	Introduction to Future Farmers of America	1-B
Unit II	Parliamentary Procedure	51-B
Unit III	Making a Group Presentation	103-B

SECTION C — SUPERVISED OCCUPATIONAL EXPERIENCE PROGRAMS

Unit I	Orientation to FFA Record Keeping	1-C
Unit II	Inventories and Net Worth	31-C
Unit III	Record-Keeping Transactions	79-C
Unit IV	Depreciation	111-C
Unit V	Closing Records	135-C

SECTION D — ANIMAL SCIENCE

Unit I	The Livestock Industry	
Unit II	Beef Breeds and Selection	
Unit III	Swine Breeds and Selection	
Unit IV	Sheep Breeds and Selection	
Unit V	Dairy Breeds and Selection	
Unit VI	Horse Breeds and Selection	
Unit VII	Livestock Feeding	

SECTION E — PLANT SCIENCE

Unit I	Introduction to Plant Science	
--------	-------------------------------------	--

SECTION F — AGRICULTURAL MECHANICS

Unit I	Agricultural Mechanics Orientation and Safety	
Unit II	Arc Welding	
Unit III	Metalwork	
Unit IV	Oxy-Gas Cutting	

USE OF THIS PUBLICATION

Instructional Units

Vocational Agriculture I contains five sections and twenty-two units of instruction. The format used by the Oklahoma CIMC includes eight basic components that form a unit: performance objectives, suggested activities for the teacher, information sheets, assignment sheets, job sheets, transparency masters, tests, and answers to tests and assignment sheets. Depending on the specific objectives, there may or may not be transparency masters, supplements, assignment sheets, and job sheets included in the unit of instruction.

All of the unit components "zero in" on measurable and observable learning outcomes. Teachers are encouraged to supplement, personalize, localize, and motivate with these materials in order to develop a complete teaching/learning process.

Units of instruction are designed for use in more than one lesson or class period of instruction. Careful study of each unit of instruction by the teacher will help him or her determine the following

- A. Amount of material that can be covered in each class period
- B. Skills that must be demonstrated
 - 1. Supplies and equipment needed
 - 2. Amount of practice needed
 - 3. Amount of class time needed for demonstrations
- C. Supplementary materials, such as pamphlets and filmstrips, that must be ordered
- D. Resource people who must be contacted

Performance Objectives (white pages)

Each unit of instruction is based on the performance needed for successful employment in an occupational area. Performance objectives are stated in two forms: unit objectives, stating the subject matter to be covered in a unit of instruction; and specific objectives, stating the performance necessary to reach the unit objective.

The objectives should be provided for students and stressed throughout the teaching/learning process. This will help answer any questions concerning performance requirements for each instructional unit. The objectives can also help determine teaching strategies and instructional methods. Prepare for each unit by deciding how each objective can best be taught.

The objective sheet may also be used as a quick pretest to determine students' prior knowledge and to determine whether further study or activities are necessary. Teachers should feel free to modify, delete, or add objectives in order to meet the needs of the students and community. When changes in objectives are made, the teacher should remember to supply the needed information, assignment and/or job sheets, and criterion test items.

Suggested Activities (pink pages)

This component is included only in teacher material. The suggested activities page assists teachers during the preparation stage of the teaching/learning process by providing suggestions for delivery and/or presentation during the instructional process. Read the suggested activities before teaching the units to allow time to obtain supplemental materials, prepare audiovisual materials, and contact outside resources. Duties of the teacher will vary according to the particular unit.

The references that are listed are ones used in the development of each unit. They should be used by the teacher to supplement her or his knowledge of the subject area or to help students with particular interests or occupational objectives in the area covered.

Transparency Masters and Supplements (pink pages)

Transparency masters provide information in a special way. Transparencies direct the class's attention to the topic of discussion. Transparencies may present new information, or they may reinforce information presented in the information sheet. They are particularly effective when identification is necessary. Make or order transparencies and place them in the notebook where they will be immediately available for use. Supplements consist of optional supplemental material such as crossword puzzles, game instructions, and additional information. Supplements may be copied and used as handouts if desired.

Information Sheet (green pages)

The information sheet provides "must know" content essential for meeting the cognitive (knowledge level) objectives of the unit. The information is written in a topical outline form and is keyed to the specific objectives.

Teachers will find that the information sheet serves as an excellent guide for presenting background knowledge necessary to develop the skills specified in the unit objective. The information sheet may also be used for coordination activities and advisory committees.

Students should read the information sheet before the information is discussed in class. Space is provided in margins for students and teachers to add notes that supplement, localize, personalize, or provide motivation for each unit.

Assignment Sheets (brown pages)

Assignment sheets give students a chance at problem solving, self-assessment, and/or practical experience with the information. They assist students in the application of knowledge that is a necessary prerequisite to skill development. Assignment sheets may be given to the student for completion in class or may be used for homework assignments. Answer sheets are provided, when appropriate, and can be used by the student and/or teacher for checking student progress.

Job Sheets (blue pages)

Job sheets are another important segment of a unit of instruction. The job sheets provide a list of equipment, tools, and materials needed to complete a manipulative or psychomotor skill. Job sheets describe a step-by-step procedure needed to complete each task or job. Diagrams, photographs, and illustrations are provided to assist students in achieving the skill.

Equipment and materials used in job sheets are not listed in order of use. The order of use should be taught in the classroom. In this way, students will not depend entirely on job sheets for equipment set up.

A teacher should demonstrate to students the procedures outlined in each job sheet. Furthermore, the teacher needs to localize the job sheet according to the equipment and supplies available in the local lab or shop situation. Job sheets also furnish potential employers with a picture of the skills being taught and the performances they might reasonably expect from a person who has completed this vocational instruction.

PREFACE

What is happening in education today? Are our schools and vocational training programs doing the job?

As we started to develop the instructional materials contained in this publication, we were reminded that today many people are calling for major reform in the educational process. We worked diligently to ensure that these instructional materials answered three questions: What are we teaching? Who are we teaching? For what purpose are we teaching?

Our mission is to provide students with subject matter needed for mastery of basic competencies essential for further education in production agriculture. We have tried to make each unit of instruction appropriate for the intended learner. The strength of the units lies in the assignment and job sheets. Another change in this publication is the new look of the suggested activities component. The suggested activities pages tie together unit content and teaching ideas.

The Nation at Risk study stated, "The goal of education is to help each student develop his or her fullest potential." If these materials are used as developed, this goal will become a reality, and our students using *Vocational Agriculture I* will be productive and motivated students.

Bob Patton

Keith Harp

ACKNOWLEDGMENTS

More than twelve months of research and writing went into the development of the instructional materials contained in this publication. We writers could not have accomplished our assignment if it had not been for many talented, dedicated, and hard-working individuals. We give special thanks to the following people for their technical input.

REPRESENTATIVES OF BUSINESS AND INDUSTRY, AND VOCATIONAL AGRICULTURE INSTRUCTORS

Jack Bedwell
Gene Dalmont
Sam Grissom
Earl Marshall
Gary Montgomery
Sam Smith
Darrell Stiles
Cliff Troutman
Alvin Beadles
Bob Chitwood
Earl Hall
Keith Schwandt
Dean Stone
Mike Thralls
Lynn Kinder
Ken Starks
Steve Collier
Jerry Pfeiffer
Norman Durham
Wayne Dimmick

Phil Berkenbile
Arlie Goforth
Wayne Grider
Chris Stewart
Alan Arthaud
Ferland Dean
Howard Hanni
Gene Benson
Earnest Davis
Roland McDaris
Jack Downey
Myron Denny
Neil Ham
Bill Enmeier
Larry Shell
Larry Harvey
Jerry Laubach
Jerry Thurman
Don McNeil
Ralph Thomas

An extra special tanks must be extended to Bob Kropp, Jarold Callahan, Bill Luce, Bob Noble, Don Topliff, David Freeman, Don Wagner, and Bill Crutcher, faculty members, Department of Animal Science, Oklahoma State University, for their technical advice and review of the animal science units. We also extend sincere appreciation to Bob Mitchell, District Supervisor, for his technical review of the dairy unit; to Verlin Hart, District Supervisor, for his review of the record-keeping and agricultural mechanics units; and to John Howell, Executive FFA Secretary, for his review and help in writing the units related to leadership and the Future Farmers of America. Sincere appreciation is also extended to Pat Lewis, Agricultural Engineering, Oklahoma State University, for his technical review of the agricultural safety unit; and to Steven Schroeder, Stillwater Milling Company, for special help on the livestock feeding unit.

Special recognition is expressed to the following people who reviewed this curriculum guide.

STATE DEPARTMENT VOCATIONAL AGRICULTURE SUPERVISORS, TEACHER EDUCATORS

Ralph Dreessen
Joe Raunika
Edward Smith
Tony Kennedy
Raymond Cockrum
Verlin Hart

Bob Mitchell
John Howell
James White
James Key
Wes Holley

Sincere appreciation is extended to Joyce Sawatzky, Assistant Coordinator, who served as project coordinator. The strength of our developmental work can be directly contributed to her leadership, patience, and determination to see that our work was completed on time without sacrificing the quality of the instructional materials. Special appreciation is also extended to our secretaries, Judy DeVaughan and Janet Sloan, for assisting with research and typing the first manuscript.

A special thank-you is extended to our many co-workers who worked diligently throughout the production phase to prepare the camera-ready copy for the printing department. Thank-you goes also to Terri Barnes, Publications Specialist, and editors Sue Buck, Sue Feasley, Terra McCluskey, Susan Walker, and Jerry Weir for their expertise and dedication while completing the many editing tasks. For the skillful execution of manuscript typing, credit is due to the typesetters working in the Communication Center: Jenny Fowler, Dona Landreth, Rose Primeaux, Gari Sha Robinson, Pat Tate, Robin Terronez, Lori White, and Joanne Voigt. Art work throughout this publication was enthusiastically completed by Carrie Williams, Art Director, and artists Gary Bradley, Kathryn Hansen, Nancy Hilley, and Dana Welborne. The quality of the published product is the result of the care and talents of the print shop personnel under the supervision of Noel Wilcoxson. To these people, and many others, we are extremely grateful because this book would not be possible without the combined efforts of everyone involved.

Bob Patton

Keith Harp

Tests (yellow pages)

This component provides criterion-referenced evaluation of every objective listed in the unit of instruction. It is crucial to note that both paper/pencil and performance objectives must be evaluated.

The tests may be written or oral. It is recommended that the tests be divided into shorter tests covering three or four objectives at a time and given soon after those objectives have been covered. A selection of questions from the units covered may be used for final tests at the end of each term if desired. If objectives have been added, deleted, or modified, be sure to make the changes on the test.

The acceptable response on a unit test, 85 percent in most units, may be raised or lowered to fit the topic or the students' ability levels. The percentage applies to the overall score, not to individual questions. The final unit grade should be obtained by using the paper/pencil score along with evaluations of student demonstrations of the desired skills.

Answers to Test and Assignment Sheets (pink pages)

These components are designed to assist the teacher in evaluation of student performance.

Page Numbering

Each publication from the Curriculum and Instructional Materials Center is assigned a specific abbreviation. For example, *Vocational Agriculture I* has been abbreviated VO AG I. The units are numbered consecutively within each section. An example of a page number is VO AG I-1-A. Since CIMC publications are loose leaf, this system of page numbering was adopted so that pages from different manuals would not get mixed up.

Methods of Disseminating Material

Material may be given out a unit or page at a time to keep the material before the student always new. Some teachers ask students to furnish a three-ring binder for the units. This is convenient for taking the materials home to study. Upon completion, each unit is then placed in a larger binder. The large binders may be purchased at cost from the CIMC. Some teachers store the materials by units in filing cabinets or boxes until needed. All the units may be given out at once if desired.

For best results, provide student materials for each student. Student materials contain everything but the test answers, answers to assignment sheets, and suggested activities. All tests are collated at the back of student material and should be removed and stored until needed. Students should be allowed to take their materials home at the end of the year.

Teaching Methods

It is a challenge to keep students motivated. Supplement the objectives by providing the "why," personal experiences, and current information. Prepare for each unit by deciding how each objective can best be taught. Allow students to become involved in preparing and planning.

Competency Profiles

Competency profiles are folders used to document student performance. The profile contains a list of the specific job competencies that should be achieved prior to leaving the training program.

CORRECTIONS AND SUGGESTIONS

The Curriculum and Instructional Materials Center wants to provide vocational instructors and students with materials that are accurate and effective. Although the Center strives to maintain the highest standards of development and production, oversights occasionally do occur. If you find any errors in this or other CIMC publications, or have suggestions for improving their usefulness in vocational programs, please notify the CIMC staff. One easy way of pointing out errors is to make a photocopy of the affected page and to indicate the correction on the copy. You can then mail the information to the CIMC, where it will be used to correct the publication before the materials are reprinted.

To ensure that the material is updated on a timely basis, it is important that you notify the Center of necessary corrections as soon as possible after discovering the error. Do not assume that someone else will notice the error and inform the CIMC; other users may be making the same assumption. Please send corrections and recommendations for improving this publication to the following address:

Assistant Coordinator for Development
Curriculum and Instructional Materials Center
Oklahoma State Department of Vocational and
Technical Education
1500 West Seventh Avenue
Stillwater, Oklahoma 74074

ORIENTATION TO VOCATIONAL AGRICULTURE UNIT I

UNIT OBJECTIVE

After completing this unit, the student should be able to select a project for the Supervised Occupational Experience Program, select an FFA judging contest in which to participate, and make plans for applying for the FFA Greenhand degree. The student will show this knowledge by completing assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with vocational agriculture.
2. State reasons for studying vocational agriculture.
3. State the purpose of the Supervised Occupational Experience Program.
4. Distinguish between types of Supervised Occupational Experience Programs.
5. List benefits of the Supervised Occupational Experience Program.
6. List responsibilities of an FFA member.
7. List FFA activities.
8. Match FFA contests to their correct descriptions and/or activities.
9. Match FFA degrees to their correct descriptions.
10. State the purpose of FFA foundation awards.
11. List local, state, and national awards available through the FFA award program.
12. State the purpose of the FFA scrapbook.
13. Select an FFA judging contest in which to participate.
14. Evaluate requirements for FFA Greenhand degree.
15. Select an FFA project for the Supervised Occupational Experience Program.

ORIENTATION TO VOCATIONAL AGRICULTURE
UNIT I

SUGGESTED ACTIVITIES

I. Unit contents

- A. Objective sheet
- B. Suggested activities
- C. Information sheet
- D. Assignment sheets
 - 1. Assignment Sheet #1 — Select an FFA Judging Contest in Which to Participate
 - 2. Assignment Sheet #2 — Evaluate Requirements for FFA Greenhand Degree
 - 3. Assignment Sheet #3 — Select an FFA Project for the Supervised Occupational Experience Program
- E. Answers to assignment sheets
- F. Test
- G. Answers to test

II. Instructor's guide

- A. Obtain materials to supplement unit.
 - 1. Books
 - a. *FFA Interscholastic Meet, 1984*. Available from Oklahoma State University, Division of Agriculture, Stillwater, Oklahoma 74078.
 - b. *Vocational Agriculture Skills, Competencies and FFA Awards*. Available from State Department of Vocational and Technical Education, Vocational Agriculture Division, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.
 - 2. Film — *FFA Ag's New Generation*. Color, 25 minutes, Venard Films, Ltd. Available from Venard Films, Ltd., 1009 Highview Road, East Peoria, Illinois 61654.

(NOTE: This film is available to Oklahoma teachers on a free-loan basis. Oklahoma teachers may order from the Oklahoma State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074. Out of state teachers must order from the address above.)

SUGGESTED ACTIVITIES

3. FFA Foundation application blanks — Available from National FFA Supply Service, National FFA Center, 5632 Mount Vernon Memorial Highway, P. O. Box 15160, Alexandria, Virginia 22309.
 4. *Official FFA Manual*. Available for purchase from the State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.
- B. Introduce unit by helping students focus on the importance of studying vocational agriculture. Explain how the vocational agriculture course will help prepare them for occupations in the field.

SUGGESTION:

- Agriculture in Oklahoma is very important to the overall economic status of our state. In 1982, Oklahoma agriculture approached a 3 billion dollar industry. Tell students that through study in vocational agriculture they will learn skills and procedures that will help them prepare for occupations in the vocational agriculture field. Ask the students to identify some full-time farmers in their community.
- C. Provide students with objective sheet.
- D. Discuss unit and specific objectives.
- E. Discuss information and assignment sheets.

(NOTE: This unit contains three assignment sheets. The assignment sheets do not have to be used in sequence.)

1. Make the terms in Section I of the Information Sheet meaningful by illustrating the meaning of each term as the term is presented.

SUGGESTION:

- Show film. Explain that agriculture is a broad field that serves many related occupations.
2. Use Information Sheet, Section II, to help students learn reasons for studying vocational agriculture. Tell students that they will study animal science, plant and soil science, agricultural mechanics, and public speaking; that they will learn how to conduct meetings, how to keep records, and how to use these records to make decisions. Stress to students that their studies in vocational agriculture will assist them in finding a job in production agriculture or in any of the related agriculture fields.

SUGGESTED ACTIVITIES

3. Use Information Sheet, Section III to help students learn to identify the purpose of the Supervised Occupational Experience Program. Have the students begin working on Assignment Sheet #3.

SUGGESTIONS:

- Explain that the Supervised Occupational Experience Program is the backbone of a vocational agriculture program, and that without such a program there would not be a place nor an opportunity to apply and practice the skills that students have learned in the classroom.
 - Invite a senior class member to speak to the class about the Supervised Occupational Experience Program. Have the speaker tell the class about the type of program he or she chose when entering the vocational agriculture program as a freshman, and have the student explain the scope of that program today.
4. Use Information Sheet, Section IV to help students learn the different types of Supervised Occupational Experience programs.

SUGGESTIONS:

- List the different types of programs on the chalkboard and discuss each of the programs in depth.
 - Assist students in preparing to select one of the two Supervised Occupational Experience programs.
5. Use Information Sheet, Section V to help students realize the benefits of a Supervised Occupational Experience Program.

SUGGESTIONS:

- Tell students that learning financial responsibilities will assist them in making decisions regarding the financing of their Supervised Occupational Experience Program.
- Stress the importance of learning skill development. Tell students that a good Supervised Occupational Experience Program provides the benefit of personal recognition and degree advancement.
- Tell students that FFA members advance faster within the FFA and vocational agriculture program if they have a strong Supervised Occupational Experience Program.

SUGGESTED ACTIVITIES

6. Use Information Sheet, Section VI to help students name the responsibilities, of an FFA member. Have students add specific local FFA program responsibilities, such as the minimum number of FFA events they must participate in at the local level, to those listed in the information sheet.

SUGGESTIONS:

- Tell students that a Future Farmer of America is an integral part of the vocational agriculture program. Stress the importance of being a committed Future Farmer of America, willing to help other Future Farmers and their chapters receive recognition.
 - Stress the importance of attending classes and maintaining good standings within the Future Farmers of America organization.
 - Stress the importance of being competitive at local, county, state, and national levels.
 - Show film, *FFA—Ag's New Generation*.
7. Use Information Sheet, Section VII to help students name activities that an FFA member can participate in.

SUGGESTIONS:

- Have a member of the sophomore class speak to the freshman class about the activities that the chapter participated in last year.
- Introduce students to the FFA program of work and the importance of the committees.
- Talk to students about the parent/member banquet that will be held later in the school year.
- Tell students that the vocational agriculture program is not carried out within the shop or the classroom, but that the total community is a part of the classroom for the vocational agriculture program: FFA and vocational agriculture students participate in many field trips and activities during the year to learn to apply the skills that they study within the classroom and the shop.

SUGGESTED ACTIVITIES

8. Use Information Sheet, Section VIII and Assignment Sheet #1 to help students match FFA contests to their correct descriptions and/or activities.

SUGGESTIONS:

- Give students a copy of the Oklahoma State University *FFA Interscholastic Meet Rules and Regulations*. Have the students use the rules and regulations to identify selected information about the different contests that will be held.
 - Have students complete Assignment Sheet #1, using the information contained in the rules and regulations.
 - Tell students that the Oklahoma State University FFA Interscholastics are always held in April of each year.
9. Use Information Sheet, Section IX and Assignment Sheet #2 to help students learn the different FFA degrees that can be earned within the vocational agriculture program.

SUGGESTIONS:

- Have last year's Star FFA Greenhand talk to the class. Have the Greenhand discuss the Supervised Occupational Experience Program. Have the Star FFA Greenhand explain the scope of his or her program.
 - Have students use the *Official FFA Manual* to study the requirements of the different degrees. It is important to tell the students that they must start preparing now for the degrees that they wish to obtain. With hard work and determination, any Future Farmer can obtain degrees that are available from the Future Farmers of America at local, state, or national levels.
10. Use Information Sheet, Section X to help students identify the purpose of the FFA Foundation awards.

SUGGESTIONS:

- Tell the students that the FFA Foundation awards are sponsored by the national FFA Foundation, a group of individuals and business and industrial groups that raise funds each year to sponsor FFA activities. The awards are their way of thanking FFA members throughout the United States for a job well done and for being a part of a very important industry.

SUGGESTED ACTIVITIES

- Give students application blanks for the different Foundation awards that are handled at a state and a national level. Talk to the students about the importance of applying for these awards, and explain how important it is to have a Supervised Occupational Experience Program. Inform students that much of the information necessary for applying for the Foundation awards can be taken directly from their *Supervised Occupational Experience Program Record Book*.
- Have a farmer in the community who was a member of the FFA chapter talk to the class about the Foundation awards he or she received while a member of the Future Farmers of America. This individual should be able to motivate the students to apply for Future Farmers of America Foundation awards.

(NOTE: For additional information about FFA Foundation awards, refer to the *Official FFA Manual*.)

11. Use Information Sheet, Section XI to talk about the different local, state, and national FFA awards available.

SUGGESTIONS:

- Spend a considerable amount of time talking about the different awards and about the local, state, and national requirements for application.
- Tell students that the National FFA has made available different categories for Foundation awards under the area of Individual Proficiency Awards. The last eight awards listed in the examples in Section XI A are new awards.

12. Use Information Sheet, Section XII to help students state the purpose of the FFA scrapbook.

SUGGESTIONS:

- Explain the importance of keeping an FFA scrapbook. Tell students that they should start keeping a record today of everything that relates to their scope of work, their achievements, and any recognition or awards they receive.
- Suggest that students get a cardboard box to use as a file, and that they organize clippings, photographs, awards of recognition in this box by years and category.
- Have one of the senior class members visit with the class to explain the importance of keeping an FFA scrapbook.

SUGGESTED ACTIVITIES

- Have an outstanding scrapbook on display in the classroom for the freshman class to study.
- Tell students that the FFA scrapbook can be ordered from the National FFA Supply Service, National FFA Center, 5632 Mount Vernon Memorial Highway, P. O. Box 15160, Alexandria, Virginia 22309.

III. Unit references

- A. American Farmer Degree Application. Stillwater, Oklahoma: State Vocational Agriculture Office, State Department of Vocational and Technical Education, 1984.
- B. Braker, Clifton R. (Pete). *Vocational Agriculture I*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, rev., 1974.
- C. *FFA Interscholastic Meet*. Stillwater, Oklahoma: Oklahoma State University, Division of Agriculture, 1984.
- D. Oklahoma FFA State Farmer Application. Stillwater, Oklahoma: State Vocational Agriculture Office, State Department of Vocational and Technical Education, 1984.
- E. *Student Handbook*. Alexandria, Virginia: Future Farmers of America Center, 1977.

ORIENTATION TO VOCATIONAL AGRICULTURE UNIT I

INFORMATION SHEET

I. Terms and definitions

A. Vocational agriculture program — Educational program that teaches young people about the science of agriculture and agriculture-related occupations, and prepares them for furthering their education or for entry into the world of work

B. Agriculture-related occupations (agribusiness) — Industries that support production agriculture

EXAMPLES: Marketing, processing, servicing

C. Future Farmers of America (FFA) — National organization for students enrolled in vocational agriculture programs; designed to provide training in leadership, citizenship, and cooperation, and to complement the total vocational agriculture program

D. Agriculture — Science or art of cultivating the soil, producing crops, raising livestock, and all other aspects created as these products move from producer to consumer

II. Reasons for studying vocational agriculture

A. Increasing national food supply

B. Improving nation's economy

C. Learning skills for an occupation

D. Learning to select and use farm products

E. Managing and using natural resources

F. Learning record keeping

G. Learning public speaking

H. Conducting meetings using parliamentary procedures

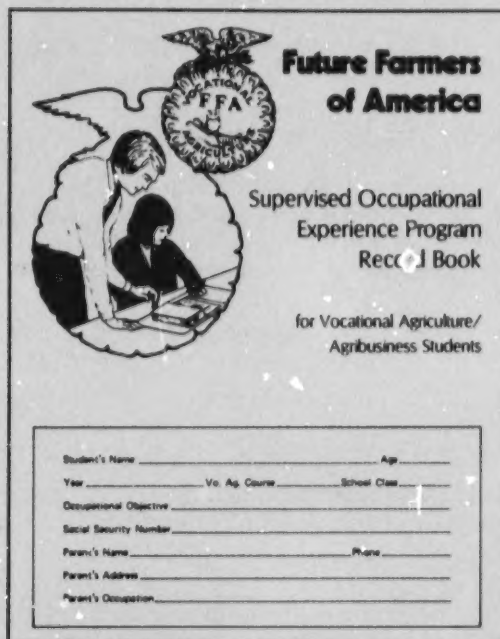
INFORMATION SHEET

- III. Purpose of the Supervised Occupational Experience Program — To provide a place and an opportunity for vocational agriculture students to apply the skills they learn in the classroom (Figure 1)

(NOTE: The records of these experiences are kept in the *Supervised Occupational Experience Program Record Book*.)

EXAMPLE:

FIGURE 1



IV. Types of Supervised Occupational Experience Programs

- A. Ownership — Student has personal ownership of the materials or other inputs required for the enterprise(s)

EXAMPLES: Production agriculture — Student-owned and operated farming or ranching program

Agribusiness — Student-owned and operated agricultural enterprises other than production agriculture

- B. Placement — Student is placed in production agriculture, in agribusiness, in school laboratories or community facilities to gain practical agricultural experiences and earn wages

(NOTE: The students do not own the facility, equipment, or products, but work for wages.)

INFORMATION SHEET

V. Benefits of the Supervised Occupational Experience Program

- A. Financial responsibility
- B. Skill development
- C. Personal recognition
- D. Degree advancement
- E. Occupational preparation

VI. Responsibilities of an FFA member

- A. Regular class attendance
- B. The carrying out of a Supervised Occupational Experience Program
- C. Active membership in the Future Farmers of America
- D. Participation in a minimum of five FFA events above the county level for State Farmer degree

(NOTE: In the space below, add specific responsibilities of your local FFA program as dictated by your instructor.)

INFORMATION SHEET

VII. FFA Activities

- A. FFA meetings
- B. Committee work
- C. Leadership conferences
- D. Contests
- E. Livestock shows and fairs
- F. State and national conventions
- G. Parent/member banquet
- H. Field trips
- I. Local, state, and national award competitions

VIII. Description and/or activities of FFA contests

- A. Farm business management — Principles of record keeping and accounting, tax regulations, crop machinery and livestock management practices, agricultural economics, agricultural law and land, labor and capital management
- B. Floriculture — Knowledge of identifying specimens by technical and common names, placing classes of floral products, making flower arrangements, planting flowers, taking telephone orders, and making a corsage
- C. Nursery/landscape — Knowledge of plant identification, classes of nursery items, general knowledge of nursery/landscape practices and landscape design, potting of nursery crop and taking a telephone order
- D. Livestock judging — Knowledge of breed characteristics, ability to rank classes of animals, ability to give verbal reasons for animal placement
- E. Meats — Grading carcasses; identifying wholesale and retail cuts of beef, pork and lamb; making decisions based on visual comparisons
- F. Milk quality and dairy foods — Knowledge of milk flavors, identification of cheeses, detection of flaws in milking equipment, and ability to rank dairy products in order of quality
- G. Poultry judging — Knowledge of candling techniques, ability to grade eggs and detect imperfections, ability to grade dressed poultry, and ability to judge and place classes of live production hens and pullets

INFORMATION SHEET

- H. Agricultural mechanics — Arc and gas welding, hot and cold metal work; plumbing; carpentry, concrete and masonry; electricity; and agricultural power and machinery
 - I. Dairy cattle judging — Knowledge of dairy breeds, understanding of production traits, ability to evaluate and place in numerical sequence a group of animals, ability to give verbal reasons for placement of animals, pedigree evaluation
 - J. Crops judging — Ability to identify and judge all types of plants and seeds common to the local community and to Oklahoma
 - K. Land, range and pasture judging — Ability to identify the various types of soils and land classes and to make land use recommendations
 - L. Parliamentary procedure — Ability to conduct an effective and efficient chapter meeting according to the correct rules of parliamentary procedure
 - M. Public speaking — Ability to write and deliver speeches in the following areas: FFA, Co-op, Banking, Soil Conservation, Greenhand, Dairy, and Farmers Union
 - N. FFA quiz — Ability of freshmen to answer questions that test knowledge of the Future Farmers of America
 - O. Entomology — Ability to identify all types of insects
- IX. Descriptions of FFA degrees
- A. Greenhand — Awarded by local chapter to member who is enrolled in vocational agriculture program, who is familiar with the aims and purposes of the FFA, who can recite the FFA creed, and who has received a majority vote from local chapter members; signifies achievement of the first level of membership
 - B. Star Greenhand — Awarded by local chapter to the most outstanding Greenhand or freshman student
 - C. Chapter Farmer — Awarded by local chapter to member who has received the Greenhand degree, has completed one year of instruction in vocational agriculture, and has earned at least \$75 from a Supervised Occupational Experience Program; signifies achievement of second level of membership
 - D. Chapter Star Farmer — Awarded by local chapter to the most outstanding member in the chapter

INFORMATION SHEET

E. State Farmer — Awarded each year to top 3 percent of FFA members who have

1. Held degree of chapter for at least one year
2. Been FFA members for at least two years
3. Led a group discussion for at least forty minutes
4. Derived an income (net profit) of at least \$800 from the Supervised Occupational Experience Program

(NOTE: Of this income, 25 percent may be agricultural occupation, or \$200 may be in production and \$600 may be in agribusiness.)

5. Invested \$800 in an agriculture program

(NOTE: Investment must be in either production agriculture or agribusiness, or a combination of both, as of January 1, the year the application is submitted. The Production Agriculture State Farmer degree stipulates that the labor income must be a minimum of \$800, of which \$200 [optional] may be derived from agribusiness. The Agribusiness State Farmer degree stipulates that the labor income must be a minimum of \$800, of which \$200 must be derived from production agriculture.)

6. Attained a minimum net worth of \$800 in agricultural investment
7. Received a grade point average of 2.0 overall, with at least a 3.0 grade point average in vocational agriculture

F. District Star Farmer — Awarded at the district level to the most outstanding member in Supervised Occupational Experience Program, leadership, and scholarship; candidates must have received the State Farmer degree**G. District and State Star Agribusinessman — Awarded at district and state level to the most outstanding member in agribusiness, leadership, and scholarship; candidates must have received the State Farmer degree****H. State Star Farmer — Governor's trophy awarded to a member selected from District Star Farmers; candidates must have received State Farmer degree**

INFORMATION SHEET

- I. American Farmer — Awarded to top FFA members in the nation who have been active FFA members for at least thirty-six months, and who have earned at least \$5,000 from a Supervised Occupational Experience Program; candidates must have received State Farmer degree

(NOTE: Each state receives two degrees per first 500 members, one degree per next 500 members, and one degree per each 666 $\frac{2}{3}$ additional members.)

- J. Regional Star Farmer — Awarded yearly to four members in the United States who are selected from American Farmer degree winners in the four national regions

- K. Star Farmer of America — Awarded annually at the National FFA Convention to the most outstanding FFA member in the nation; candidates must have achieved the American Farmer degree

- L. Star Agribusinessman of America — Awarded to candidates throughout the nation who hold the American Farmer degree, who have been recommended by the state association, and who can

1. List their career goals in agribusiness
2. Describe each agribusiness operation in which they are employed, hold in partnership, or own
3. List and describe five skills or competencies developed through a Supervised Occupational Experience Program
4. Describe their managerial responsibilities
5. Provide an annual summary of total hours worked each year
6. Itemize agribusiness investments and other resources accumulated

- X. Purpose of FFA Foundation awards — To recognize FFA members' achievements at local, state, and national levels

(NOTE: The awards are sponsored by the National FFA Foundation.)

INFORMATION SHEET

XI. Awards available on local, state, and national levels

A. Individual Proficiency Awards

EXAMPLES: Agricultural Electrification, Agricultural Mechanics, Agricultural Processing, Agricultural Sales and/or Service, Beef Production, Crop Production, Diversified Livestock Production, Fish and Wildlife Management, Floriculture, Forest Management, Fruit and/or Vegetable Production, Home and/or Farmstead Improvement, Horse Proficiency, Nursery Operations, Outdoor Recreation, Placement in Agricultural Production, Poultry Production, Sheep Production, Soil and Water Management, Swine Production, Turf and Landscape Management, Cereal Grain Production, Fiber Crop Production, Forage Production, Oil Crop Production, Specialty Crop Production, Dairy Production

B. Individual Achievement Awards

EXAMPLES: FFA State Reporter, FFA State Secretary, FFA Wheat King, FFA Peanut Production

C. Chapter Foundation Awards

EXAMPLES: Superior Awards — Bronze, Silver, Gold; Building Our American Communities; Farm Safety

D. Chapter Improvement Awards

EXAMPLES: FFA Crop Fertilization Demonstration, District Chapter Achievement, Farm Safety, Farmer Stockman Trophy, Cooperative Chapter

E. Scholarship

EXAMPLE: Santa Fe Railway

F. Dairy Breed Association Awards

EXAMPLES: Jersey, Brown Swiss, Ayrshire, Milking Shorthorn, Holstein

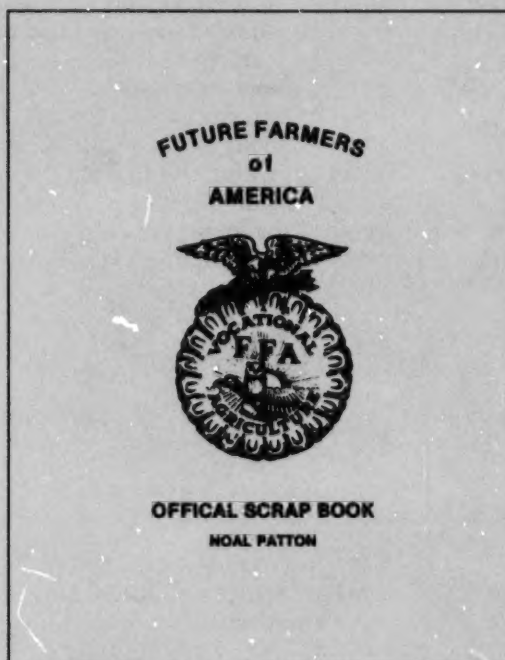
INFORMATION SHEET

- XII. Purpose of FFA scrapbook — To record FFA accomplishments and achievements that describe and verify four years of work in vocational agriculture (Figure 2)

(NOTE: The FFA scrapbook is required for all State Farmers.)

EXAMPLE:

FIGURE 2



Used with permission of the Future Farmers of America, National FFA Center, Alexandria, Virginia.

ORIENTATION TO VOCATIONAL AGRICULTURE
UNIT IASSIGNMENT SHEET #1 — SELECT AN FFA JUDGING CONTEST
IN WHICH TO PARTICIPATE

NAME _____ SCORE _____

Being on an FFA judging team is a very interesting and exciting experience. The contests allow you to apply the skills you have learned in your vocational agriculture classroom and shop. Contests are held at the local, county, state, and national levels. The time to start preparing for the team is now. Ask your instructor for a copy of the Oklahoma State University *FFA Interscholastic Meet* rules, and regulations.

Study the rules and regulations for each contest, and then select a contest in which you wish to work. Identify the contest and answer the following questions.

A. Contest name _____

B. How many members are on a team? _____

C. What resource material do you have to study? _____
_____D. What type of awards are given to the first-place team? _____

E. Does the high-place individual receive an award or recognition? _____

F. Does the contest have a written assignment? _____

G. Why did you select this contest? _____

ORIENTATION TO VOCATIONAL AGRICULTURE
UNIT IASSIGNMENT SHEET #2 — EVALUATE REQUIREMENTS FOR FFA
GREENHAND DEGREE

NAME _____

SCORE _____

The FFA Greenhand degree is the highest degree a first-year vocational agriculture student can earn in the FFA chapter. The best way to prepare for this outstanding achievement is to be a very active FFA member. Participate in such activities as public speaking, chapter meetings, FFA judging contests; serve on standing committees; participate at fairs and shows; and attend all FFA meetings. You also need a Supervised Occupational Experience Program that is sufficient in size and scope to be worthy of this award. Start making plans now for applying for the award late in the school year.

- A. Ask your instructor what the qualifications are. List the qualifications below.

- B. Ask the instructor if there is a form or an application for the award. If there is an application or form, obtain it and study its requirements. If there is no form, ask your instructor for the information that will be necessary to apply for the award. Outline the requirements below.

- C. Ask your instructor for the names of FFA members who have received the award in the last three years.

Name _____

Name _____

Name _____

ASSIGNMENT SHEET #2

D. Interview the students listed in C, and ask them how they won the award.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are some small, dark specks and faint smudges scattered across the surface, likely due to dust or imperfections in the paper or scanning process. No text or other markings are present on the page.

ORIENTATION TO VOCATIONAL AGRICULTURE
UNIT I

ASSIGNMENT SHEET #3 — SELECT AN FFA PROJECT FOR THE
SUPERVISED OCCUPATIONAL EXPERIENCE PROGRAM

NAME _____ SCORE _____

You learn best by doing. Your Supervised Occupational Experience Program allows you to apply and practice what you have learned in your vocational agricultural studies. Your advancement in the FFA and your vocational agriculture and FFA career depend on your Supervised Occupational Experience Program.

In selecting a program, you should consider personal preference (your likes and dislikes), where you live (rural area or city), your spending power (money), and your resources (land, equipment, facilities). Your instructor will help you choose a project that is best suited to your needs. The instructor will also talk with your parents. But first you must decide what you want and like. To assist you in making your selection, answer the questions that follow.

A. Do you like to work with livestock? Yes _____ No _____

B. What type of livestock do you like? Circle your responses.

1. Beef cattle
2. Dairy
3. Sheep
4. Swine
5. Horses
6. Poultry
7. Rabbits

C. Do you have a place to keep livestock? Yes _____ No _____

If yes, describe the place. _____

D. Do you like working with crops and plants? Yes _____ No _____

ASSIGNMENT SHEET #3

E. What type of crops and plants do you like? Circle your response.

- | | |
|------------|---------------------------|
| 1. Wheat | 6. Peanuts |
| 2. Corn | 7. Soybeans |
| 3. Oats | 8. Vegetable production |
| 4. Rye | 9. Fruit production |
| 5. Sorghum | 10. Ornamental production |

F. Do you have a place to grow crops and plants? Yes _____ No _____

If yes, describe the place. _____

G. Do you own or have access to farming equipment? Yes _____ No _____

H. What type of projects do you think you will choose for your Supervised Occupational Experience Program? List them below.

(NOTE: A Supervised Occupational Experience Program in production agriculture or agribusiness is a three-way agreement between you, your parents, and your vocational agriculture instructor. This agreement is in your *FFA SOEP Record Book* and should be filled out and agreed upon prior to purchasing a project. Take the agreement home and discuss it with your parents. Obtain your parents' permission for and agreement with your project. Have your vocational agriculture instructor approve the points of the agreement, and then copy the information into your record book and have all parties sign the agreement.)

ORIENTATION TO VOCATIONAL AGRICULTURE
UNIT I

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

(NOTE: Use the following criteria as an aid in evaluating the completed assignment sheet.)

- A. Did the student select a contest to review?
- B. Did the student answer the questions correctly?
- C. Did the student want to work on the judging team?
- D. Did the student make a good decision?

Assignment Sheet #2

(NOTE: Use the following criteria as an aid in evaluating the completed assignment sheet.)

- A. Did the student ask good questions?
- B. Did the student interview previous Greenhands?
- C. Is the student interested in applying for the award?

Assignment Sheet #3

(NOTE: Use the following criteria as an aid in evaluating the completed assignment sheet.)

- A. Did the student answer all of the questions?
- B. Did the student make a decision about a project?
- C. Did the student obtain parents' permission for project?

ORIENTATION TO VOCATIONAL AGRICULTURE UNIT I

TEST

NAME _____

SCORE _____

1. Match to their correct definitions terms associated with vocational agriculture. Write the correct numbers in the blanks.

_____a. National organization for students enrolled in vocational agriculture programs; designed to provide training in leadership, citizenship, and cooperation, and to complement the total vocational agriculture program

_____b. Industries that support production agriculture

_____c. Science or art of cultivating the soil, producing crops, raising livestock, and all other aspects created as these products move from producer to consumer

_____d. Educational program that teaches young people about the science of agriculture and agriculture-related occupations, and prepares them for furthering their education or for entry into the world of work

1. Vocational agriculture program

2. Agriculture

3. Future Farmers of America (FFA)

4. Agriculture-related occupations (agribusiness)

2. State three reasons for studying vocational agriculture.

a. _____

b. _____

c. _____

3. State the purpose of the Supervised Occupational Experience Program.

TEST

4. Distinguish between types of Supervised Occupational Experience Programs. Write an "X" in the blank before the description of the ownership program.

_____a. Student is placed in production agriculture, in agribusiness, in school laboratories or community facilities to gain practical agricultural experiences and earn wages

_____b. Student has personal ownership of the materials or other inputs required for the enterprise (s)

5. List three benefits of the Supervised Occupational Experience Program.

a. _____

b. _____

c. _____

6. List responsibilities of an FFA member.

a. _____

b. _____

c. _____

d. _____

7. List five FFA activities.

a. _____

b. _____

c. _____

d. _____

e. _____

TEST

8. Match FFA contests to their correct descriptions and/or activities. Write the correct numbers in the blanks. Contests and descriptions are continued on the next page.

- | | |
|--|---|
| <p>_____a. Principles of record keeping and accounting, tax regulations, crop machinery and livestock management practices, agricultural economics, agricultural law, and land, labor and capital management</p> <p>_____b. Knowledge of identifying specimens by technical and common names, placing classes of floral products, making flower arrangements, planting flowers, taking telephone orders, and making a corsage</p> <p>_____c. Knowledge of plant identification, classes of nursery items, general knowledge of nursery/landscape practices and landscape design, potting of nursery crop and taking a telephone order</p> <p>_____d. Knowledge of breed characteristics, ability to rank classes of animals, ability to give verbal reasons for animal placement</p> <p>_____e. Grading carcasses; identifying wholesale and retail cuts of beef, pork and lamb; making decisions based on visual comparisons</p> <p>_____f. Knowledge of milk flavors, identification of cheeses, detection of flaws in milking equipment, and ability to rank dairy products in order of quality</p> <p>_____g. Knowledge of candling techniques, ability to grade eggs and detect imperfections, ability to grade dressed poultry, and ability to judge and place classes of live production hens and pullets</p> <p>_____h. Arc and gas welding; hot and cold metal work; plumbing; carpentry; concrete and masonry; electricity; and agricultural power and machinery</p> | <p>1. Meats</p> <p>2. Nursery/landscape</p> <p>3. Floriculture</p> <p>4. Agricultural mechanics</p> <p>5. Milk quality and dairy foods</p> <p>6. Farm business management</p> <p>7. Livestock judging</p> <p>8. Poultry judging</p> |
|--|---|

TEST

- | | | |
|---------|---|-------------------------------------|
| _____i. | Knowledge of dairy breeds, understanding of production traits, ability to evaluate and place in numerical sequence a group of animals, ability to give verbal reasons for placement of animals, pedigree evaluation | 9. Entomology |
| _____j. | Ability to identify and judge all types of plants and seeds common to the local community and to Oklahoma | 10. Crops judging |
| _____k. | Ability to identify the various types of soils and land classes and to make land use recommendations | 11. FFA quiz |
| _____l. | Ability to conduct an effective and efficient chapter meeting according to the correct rules of parliamentary procedure | 12. Parliamentary procedure |
| _____m. | Ability to write and deliver speeches in the following areas: FFA, Co-op, Banking, Soil Conservation, Greenhand, Dairy, and Farmers Union | 13. Land, range and pasture judging |
| _____n. | Ability of freshmen to answer questions that test knowledge of the Future Farmers of America | 14. Public speaking |
| _____o. | Ability to identify all types of insects | 15. Dairy cattle judging |
9. Match FFA degrees to their correct descriptions. Write the correct numbers in the blanks. Degrees and descriptions are continued on the following pages.
- | | | |
|---------|--|-------------------------|
| _____a. | Awarded by local chapter to member who has received the Greenhand degree, has completed one year of instruction in vocational agriculture, and has earned at least \$75 from a Supervised Occupational Experience Program; signifies achievement of second level of membership | 1. District Star Farmer |
| _____b. | Awarded at the district level to the most outstanding member in Supervised Occupational Experience Program, leadership, and scholarship; candidates must have received the State Farmer degree | 2. Chapter Farmer |

TEST

- | | |
|---|--|
| <p>_____c. Awarded annually at the National FFA Convention to the most outstanding FFA member in the nation; candidates must have achieved the American Farmer degree</p> <p>_____d. Governor's trophy awarded to a member selected from District Star Farmers; candidates must have received the State Farmer degree</p> <p>_____e. Awarded by local chapter to the most outstanding Greenhand or freshman student</p> <p>_____f. Awarded to candidates throughout the nation who hold the American Farmer degree, who have been recommended by the state association, and who can list their career goals in agribusiness; describe each agribusiness operation in which they are employed, hold in partnership, or own; list and describe five skills or competencies developed through a Supervised Occupational Experience Program; describe their managerial responsibilities; provide an annual summary of total hours worked each year; and itemize agribusiness investments and other resources accumulated</p> <p>_____g. Awarded yearly to four members in the United States who are selected from American Farmer degree winners in the four national regions</p> <p>_____h. Awarded by local chapter to member who is enrolled in vocational agriculture program, who is familiar with the aims and purposes of the FFA, who can recite the FFA creed, and who has received a majority vote from local chapter members; signifies achievement of the first level of membership</p> | <p>3. Star Greenhand</p> <p>4. Star Agribusinessman of America</p> <p>5. Regional Star Farmer</p> <p>6. Greenhand</p> <p>7. Star Farmer of America</p> <p>8. State Star Farmer</p> |
|---|--|

TEST

- ____i. Awarded each year to top 3 percent of the FFA members who have held degree of chapter for at least one year; been FFA members for at least two years; led a group discussion for at least forty minutes; derived an income (net profit) of at least \$800 from the Supervised Occupational Experience Program; invested \$800 in an agriculture program; attained a minimum net worth of \$800 in agricultural investment; received a grade point average of 2.0 overall, with at least a 3.0 grade point average in vocational agriculture
- ____j. Awarded to the top FFA members in the nation who have been active FFA members for at least thirty-six months, and who have earned at least \$5,000 from a Supervised Occupational Experience Program; candidates must have received State Farmer degree
- ____k. Awarded by local chapter to the most outstanding member in the chapter
- ____l. Awarded at the district and state level to the most outstanding member in agribusiness, leadership, and scholarship; candidates must have received the State Farmer degree
9. American Farmer
10. State Farmer
11. District and State Star Agribusinessman
12. Chapter Star Farmer
10. State the purpose of FFA Foundation awards.
- _____
- _____
11. List five local, state, and national awards available through the FFA award program.
- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

TEST

12. State the purpose of the FFA scrapbook.

(NOTE: Test questions 13-15 list the assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

13. Select an FFA judging contest in which to participate.
14. Evaluate requirements for FFA Greenhand degree.
15. Select an FFA project for the Supervised Occupational Experience Program.

ORIENTATION TO VOCATIONAL AGRICULTURE
UNIT I

ANSWERS TO TEST

1.
 - a. 3
 - b. 4
 - c. 2
 - d. 1
2. Answer should include any three of the following
 - a. Increasing national food supply
 - b. Improving nation's economy
 - c. Learning skills for an occupation
 - d. Learning to select and use farm products
 - e. Managing and using natural resources
 - f. Learning record keeping
 - g. Learning public speaking
 - h. Conducting meetings using parliamentary procedures
3. To provide a place and an opportunity for vocational agriculture students to apply the skills they learn in the classroom
4. b
5. Answer should include any three of the following
 - a. Financial responsibility
 - b. Skill development
 - c. Personal recognition
 - d. Degree advancement
 - e. Occupational preparation

ANSWERS TO TEST

6. Answer should include the following, and may include any of the local FFA responsibilities dictated by the instructor
- a. Regular class attendance
 - b. The carrying out of a Supervised Occupational Experience Program
 - c. Active membership in the Future Farmers of America
 - d. Participation in a minimum of five FFA events above the county level for State Farmer degree
7. Answer should include any five of the following
- a. FFA meetings
 - b. Committee work
 - c. Leadership conferences
 - d. Contests
 - e. Livestock shows and fairs
 - f. State and national conventions
 - g. Parent/member banquet
 - h. Field trips
 - i. Local, state, and national award competitions
- 8.
- | | | | |
|----|---|----|----|
| a. | 6 | i. | 15 |
| b. | 3 | j. | 10 |
| c. | 2 | k. | 13 |
| d. | 7 | l. | 12 |
| e. | 1 | m. | 14 |
| f. | 5 | n. | 11 |
| g. | 8 | o. | 9 |
| h. | 4 | | |

ANSWERS TO TEST

9.	a.	2	e.	3	i.	10
	b.	1	f.	4	j.	9
	c.	7	g.	5	k.	12
	d.	8	h.	6	l.	11

10. To recognize FFA members' achievements at local, state, and national levels
11. Answer should include any five of the following
- a. Individual Proficiency Awards
 - b. Individual Achievement Awards
 - c. Chapter Foundation Awards
 - d. Chapter Improvement Awards
 - e. Scholarship
 - f. Dairy Breed Association Awards
12. To record FFA accomplishments and achievements that describe and verify four years of work in vocational agriculture
13. Evaluated to the satisfaction of the instructor
14. Evaluated to the satisfaction of the instructor
15. Evaluated to the satisfaction of the instructor

AGRICULTURAL SAFETY UNIT II

UNIT OBJECTIVE

After completing this unit, the student should be able to discuss the importance of safety in agriculture, and discuss safety precautions as related to operating tractors and equipment and to working with livestock. The student should also be able to make recommendations to correct safety hazards. The student will show this knowledge by completing the assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Define terms associated with agricultural safety.
2. List major agricultural safety areas.
3. Identify standard hand signals used when operating farm equipment on public roads.
4. Label hand signals used in machinery operation communications.
5. State safety precautions to observe when operating general farm machinery and equipment.
6. Select from a list regulations concerning use of the slow-moving vehicle (SMV) emblem.
7. Distinguish between safe practices for operating tractor to prevent side overturns and safe practices for operating tractor to prevent rear overturns.
8. State safety precautions to observe when refueling equipment.
9. State safety precautions to observe when handling farm animals.
10. Make recommendations to correct safety hazards.

AGRICULTURAL SAFETY
UNIT II

SUGGESTED ACTIVITIES

- I. Unit contents
 - A. Objective sheet
 - B. Suggested activities
 - C. Transparency masters
 - 1. TM #1 — Major Factors and Percentages Involved in Agricultural Accidents (1983)
 - 2. TM #2 — Slow-Moving Vehicle Emblem (SMV)
 - D. Information sheet
 - E. Assignment sheets
 - 1. Assignment Sheet #1 — Identify Hand Signals Used in Machinery Operation Communications
 - 2. Assignment Sheet #2 — Make Recommendations to Correct Safety Hazards
 - F. Answers to assignment sheets
 - G. Test
 - H. Answers to test
- II. Instructor's guide
 - A. Obtain materials needed to supplement unit.
 - 1. OSU Fact Sheets relating to agricultural safety, available from the OSU County Extension offices in Oklahoma.
 - 2. *Fundamentals of Machine Operation—Agricultural Machinery Safety*. Available from John Deere Service Publications, Dept. F, John Deere Road, Moline, Illinois 61265.
 - 3. *Safe Tractor Operation and Daily Care*, published by American Association for Vocational Instructional Materials (AAVIM). Available from the Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.

SUGGESTED ACTIVITIES

4. Film, *How to Have an Accident*, color, 27 minutes. Available from University of Wisconsin Extension, Box 2093, Madison, Wisconsin 53701, (608) 262-1644.
5. Demonstration program on tractor upsets, available through the Oklahoma Farm Bureau. This program includes demonstrations with actual scale-model tractors. To schedule, contact Sam Fair at (405) 523-2300.

B. Introduce unit.

1. Use Transparency #1 to illustrate causes of agriculture-related accidents and their frequency.
2. Remind students that the National Safety Council considers agricultural occupations to rank high in highly hazardous categories. The following are National Safety Council figures for 1982.
 - a. Agricultural workers make up 3.4 percent of the labor force.
 - b. Agricultural workers make up 16 percent of job-connected fatalities.
 - c. Agricultural workers make up 9 percent of job-connected injuries and illnesses.

C. Provide students with objective sheet.

D. Discuss unit and specific objectives.

(NOTE: The major thrusts of this unit are twofold: to increase student awareness of potential safety hazards and to provide basic information for preventing accidents in hazardous agricultural work areas [handling farm machinery, equipment, and animals].)

E. Discuss information and assignment sheets.

1. Use Information Sheet, Section I to discuss terms associated with agricultural safety.

SUGGESTIONS:

- Stress to students how potentially hazardous agricultural work is because of the dangers associated with power machinery and equipment and some farm animals.
- Allow students to discuss any potentially hazardous situations that exist at their homes.

SUGGESTED ACTIVITIES

2. Discuss major classifications of agricultural safety. Use Information Sheet, Section II and Assignment Sheet #2. Specify where and how students are to complete the various parts of Assignment Sheet #2.

SUGGESTIONS:

- Emphasize that accidents occur most frequently in situations involving farm machinery and equipment, and animals. Give examples.
- Have students work in pairs to survey each other's homes and farms.
- Make arrangements to tour a farm so that students may complete the assignment sheet.

3. Prepare students to use proper hand signals when operating farm equipment. Use Information Sheet, Sections III and IV and Assignment Sheet #1.

SUGGESTIONS:

- Have students practice using hand signals on an actual tractor.
- Explain that hand signals originated because early motor vehicles and farm equipment did not have signal lights.

4. Discuss safety precautions to observe when operating general farm machinery and equipment. Use Information Sheet, Section V and Survey #3 in Assignment Sheet #2.

SUGGESTIONS:

- Show *How to Have an Accident*.
- Post news clippings, or share information from recent issues of *Farm Safety Review*.
- Have students collect articles related to agricultural safety from current newspapers and magazines.
- Make display of fact sheets related to agricultural safety; follow up with student reports.
- List names of people in your community who have had accidents, or bring to class a person who has survived an accident.

SUGGESTED ACTIVITIES

5. Use Information Sheet, Section VI to discuss regulations for use of slow-moving vehicle (SMV) emblem.

SUGGESTIONS:

- Have students record incidents of correct and incorrect use of the SMV emblem observed during a specified period.
- Ask students to share situations at their homes in which SMV emblems are needed or used.

6. Use Information Sheet, Section VII to discuss safety precautions for operating tractors to prevent overturns.

SUGGESTIONS:

- Arrange for Farm Bureau safety specialist to conduct mock demonstrations of tractor overturns.
- Allow students to share instances they may know of regarding tractor overturns.

7. Use Information Sheet, Section VIII to discuss safety precautions to observe when refueling equipment.

SUGGESTIONS:

- Invite a resource person from a farm machinery dealership to discuss factory recommendations for safely refueling equipment. Also ask resource person to discuss why these recommendations are made.
- Invite an insurance representative to discuss refueling safety.
- Invite a fuel dealer who delivers fuel to rural areas to discuss safety in refueling.

8. Use Information Sheet, Section IX to discuss safety precautions to observe when handling farm animals.

SUGGESTION:

- Have students share experiences created by violating safety precautions.

E. Give test.

SUGGESTED ACTIVITIES

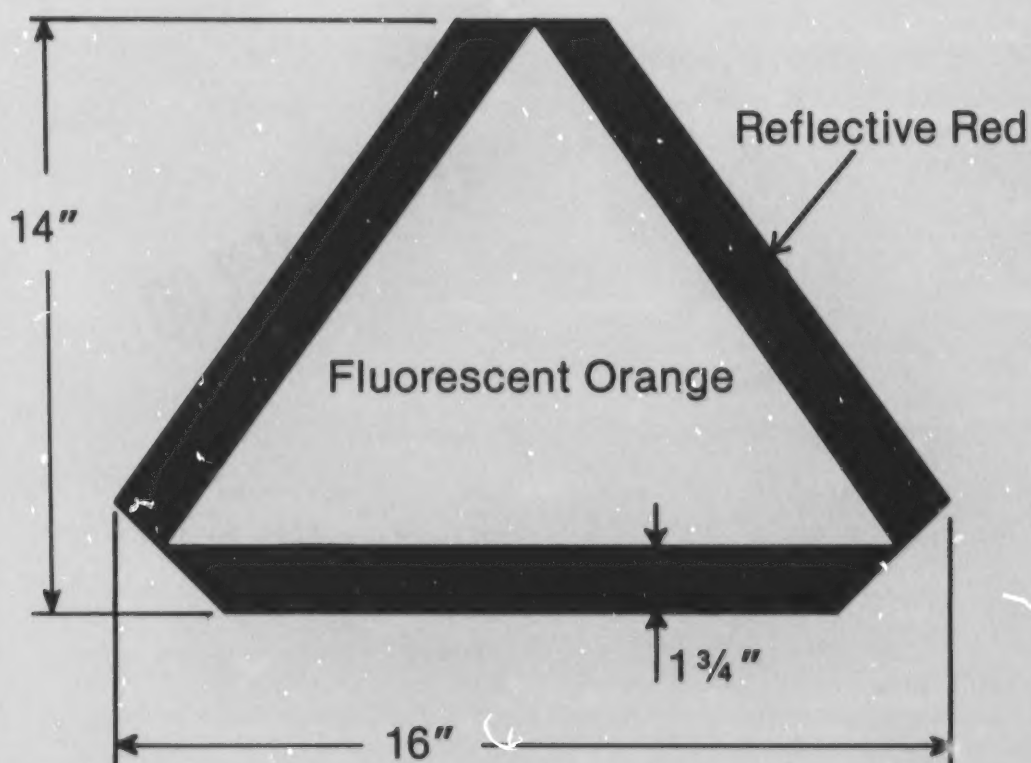
III. Unit references

- A. Braker, Clifton R. "Pete." *Vocational Agriculture I*, rev. Stillwater, Oklahoma: State Department of Vocational and Technical Education, 1974.
- B. *Fundamentals of Machine Operation—Agricultural Machinery Safety*. Moline, Illinois: Deere and Company, John Deere Service Publications, 1983.
- C. *Petroleum Power Program: Tractor 2*. Chevy Chase, Maryland: National 4-H Service Council, 1978.
- D. *Safe Tractor Operation and Daily Care*. Athens, Georgia: American Association for Vocational Instructional Materials, 1981.

Major Factors and Percentages Involved in Agricultural Accidents (1983)

Farm Machinery and Equipment	24%
Animals	18%
Hand Tools	8%
Power Tools	5%

Slow-Moving Vehicle Emblem (SMV)



**AGRICULTURAL SAFETY
UNIT II****INFORMATION SHEET****I. Terms and definitions associated with agricultural safety**

- A. Accident — Unexpected or undesired event that interrupts work routines and often results in injury or loss
- B. Unsafe condition — Work condition or factor in the work environment or situation that has the potential to cause an accident
- C. Unsafe action — Work process or factor of human activity in the work situation that has the potential to cause an accident
- D. Safety hazard — Condition that often causes accidents

EXAMPLES: Faulty electrical wiring, unguarded tools and equipment, cluttered or poorly designed work areas

II. Major agricultural safety areas

- A. Machinery safety
- B. Home safety
- C. Building and yard safety
- D. Electrical safety
- E. Fire safety
- F. Livestock safety

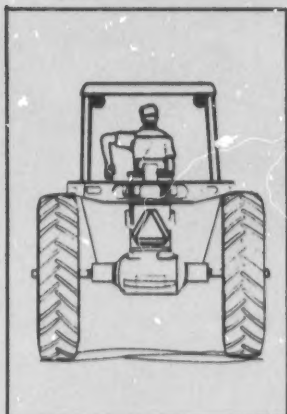
III. Standard hand signals for operating farm equipment on public roads (Figures 1-3)

(NOTE: Oklahoma regulations state that no person may turn any vehicle on public roads without first giving an appropriate signal. No person may stop or suddenly decrease speed without first giving an appropriate signal to any driver to the rear. All hand signals required must be given with the left hand and arm.)

INFORMATION SHEET

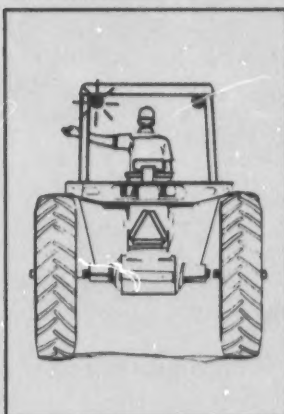
A. Stop

FIGURE 1



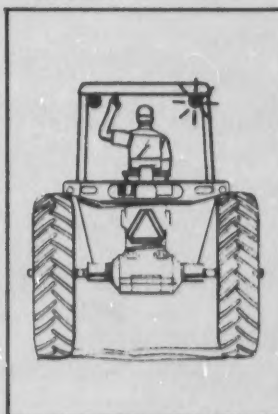
B. Left turn

FIGURE 2



C. Right turn

FIGURE 3



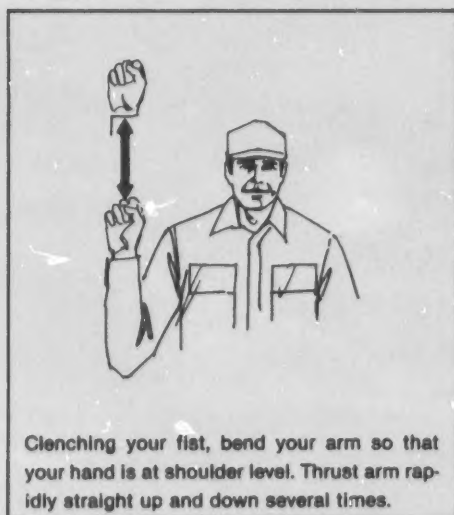
Figures 1-3 used with permission of Deere and Company, Moline, Illinois.

IV. Hand signals used in machinery operation communications (Figures 4-14)

(NOTE: Because of noise or distance, hand signal communication between a machinery operator and someone on the ground is sometimes necessary and helpful.)

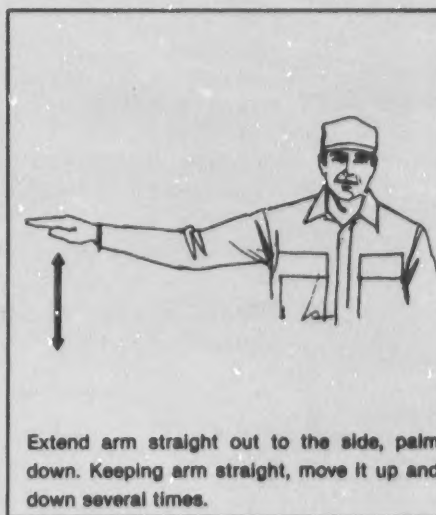
A. Speed it up

FIGURE 4



B. Slow it down

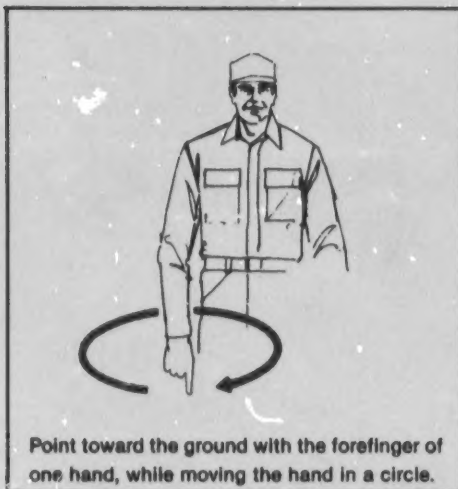
FIGURE 5



INFORMATION SHEET

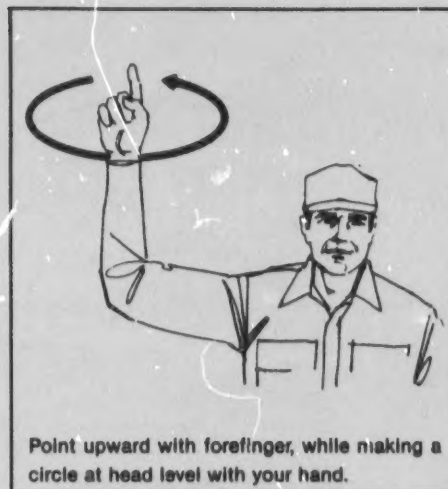
C. Lower equipment

FIGURE 6



D. Raise equipment

FIGURE 7



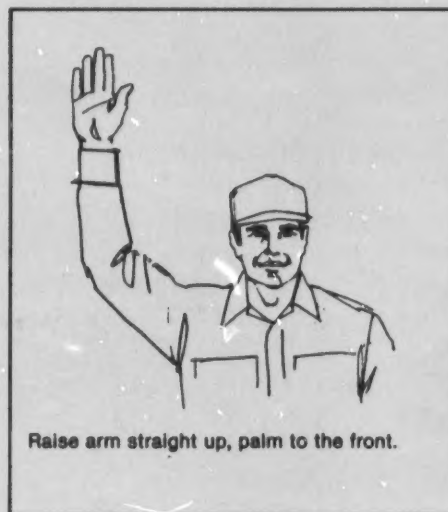
E. This far to go

FIGURE 8



F. Stop

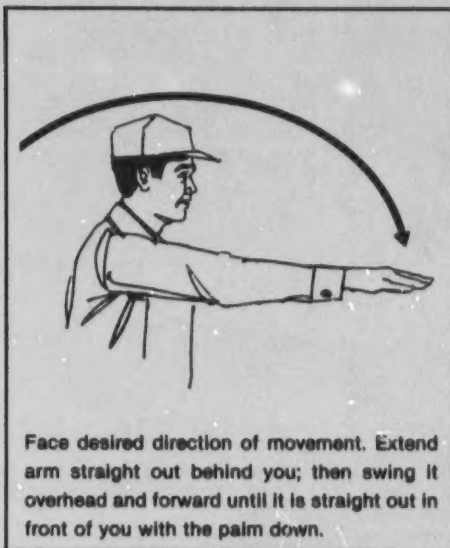
FIGURE 9



INFORMATION SHEET

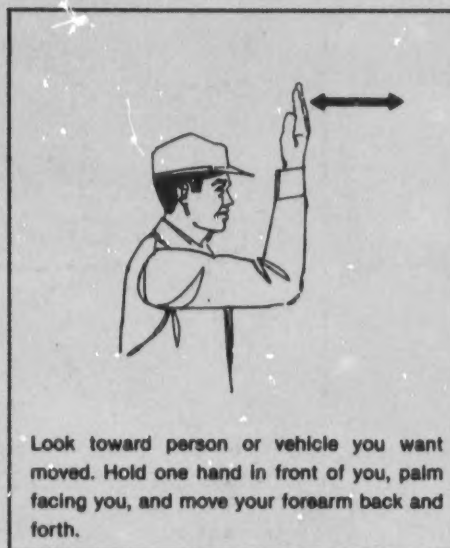
G. Move out—take off

FIGURE 10



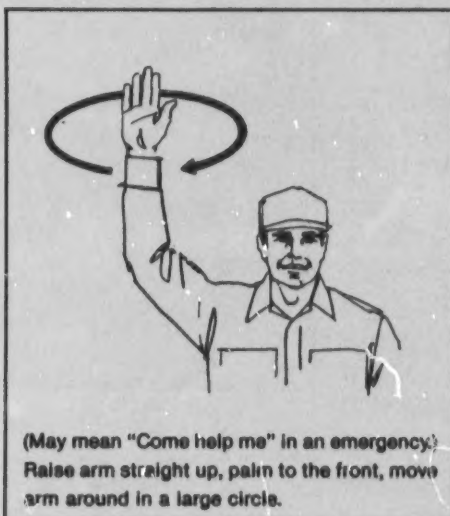
H. Move toward me—follow me

FIGURE 11



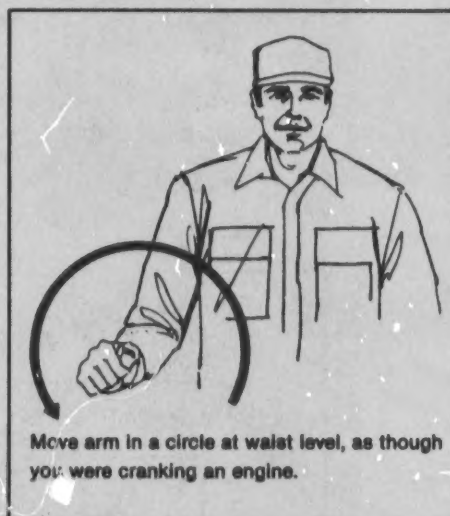
I. Come to me

FIGURE 12



J. Start the engine

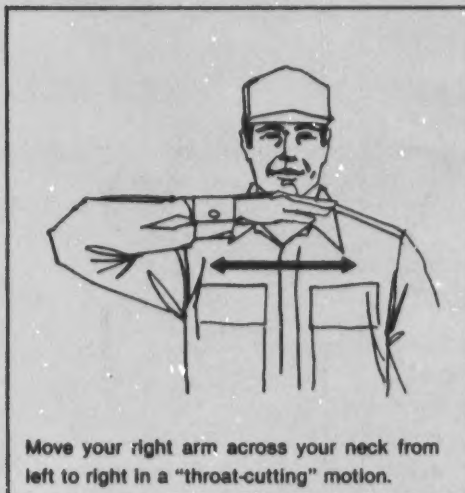
FIGURE 13



INFORMATION SHEET

K. Stop the engine

FIGURE 14



Figures 4-14 used with permission of Deere and Company, Moline, Illinois.

V. Safety precautions to observe when operating general farm machinery and equipment

A. Keep all guards and shields in place

B. Dress properly

(NOTE: Loose-fitting clothing is a hazard. Even something as seemingly insignificant as a thread or shoestring can be dangerous. See Figure 15.)

EXAMPLE:

FIGURE 15



INFORMATION SHEET

C. Take breaks

(NOTE: Working long, hard hours makes a person mentally and physically tired. When tired, people become careless and reaction time to hazards is slower.)

D. Avoid situations that can pinch, wrap, shear, crush, or pull in

(CAUTION: Practically all moving parts of any type of machinery have the capabilities of any or all of the actions stated above.)

E. Be aware of overhead electrical lines when handling long, vertical objects or operating tall equipment, or equipment with antennas

(NOTE: Individuals have been killed as a result of equipment or antennas coming in contact with electrical lines. Electrocution occurs when the person holding the equipment in contact with electrical lines touches the ground.)

F. Always turn off machines before working on them or making adjustments

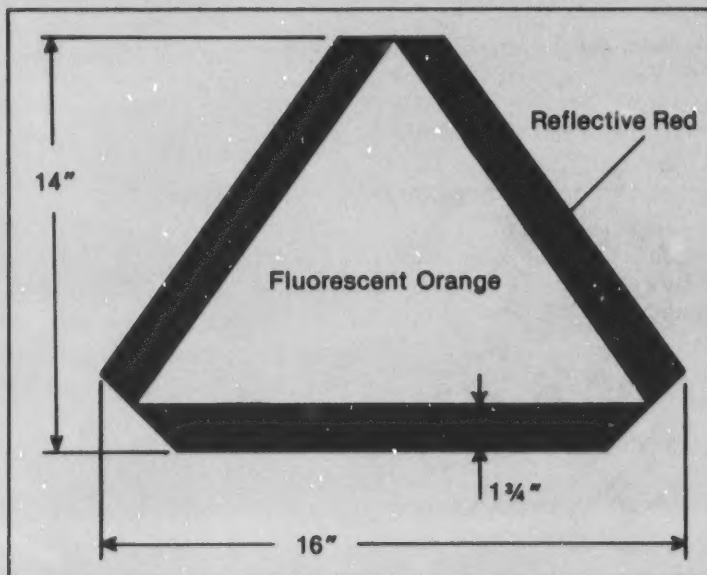
G. Before leaving self-propelled equipment, set the brakes or place in PARK

H. Never operate a machine on which you have not received extensive training

VI. Regulations concerning use of the SMV emblem

EXAMPLES: SMV emblem displayed correctly (Figures 16-18)

FIGURE 16



INFORMATION SHEET

FIGURE 17

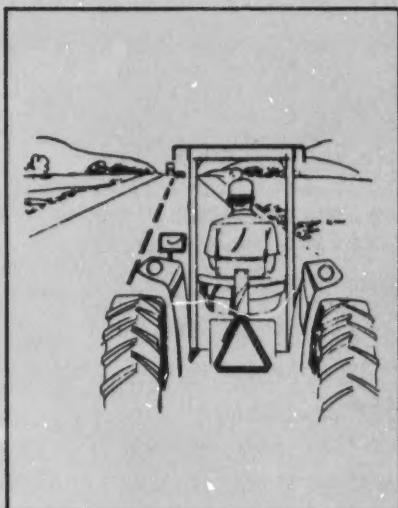
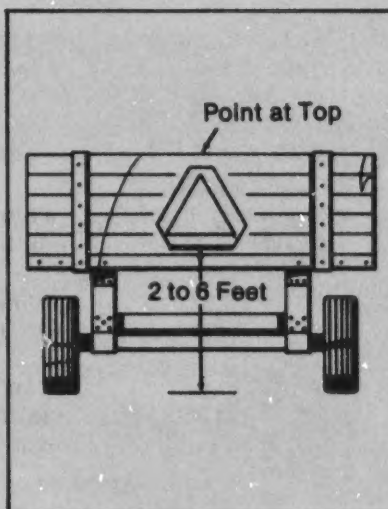


FIGURE 18



Figures 17 and 18 used with permission of Deere and Company, Moline, Illinois.

- A. Required on all vehicles that move 25 miles per hour or less on public roads

(NOTE: Any time equipment is moving above 25 miles per hour, the SMV emblem must be covered or removed.)

- B. Must be mounted point up in plain sight of traffic approaching from rear
- C. Must be mounted so that bottom edge is 2 to 6 feet above the ground
- D. Must be displayed in addition to any lighting devices or other equipment required by law
- E. Must be displayed day and night

VII. Safety practices for operating tractor to prevent overturns

(NOTE: Rear overturns and side overturns are the major types of tractor upsets. Studies show that 75 percent of the fatalities that result from tractor upsets are side overturns.)

- A. Side overturns

1. Widen wheel base to widest setting possible for job to be done

(NOTE: A wide wheel base provides the widest possible base of stability for the tractor.)

INFORMATION SHEET

2. Lock brake pedals together before driving at transport speeds

(NOTE: Applying the brakes to one wheel will cause the tractor to swerve abruptly, and at high speeds will cause side overturns.)

3. Restrict speed according to operating conditions

(NOTE: Travel slowly enough to see and to react to hazards such as bumps, rocks, stumps, holes, ruts, and depressions.)

4. Pull heavy loads and equipment at safe speeds

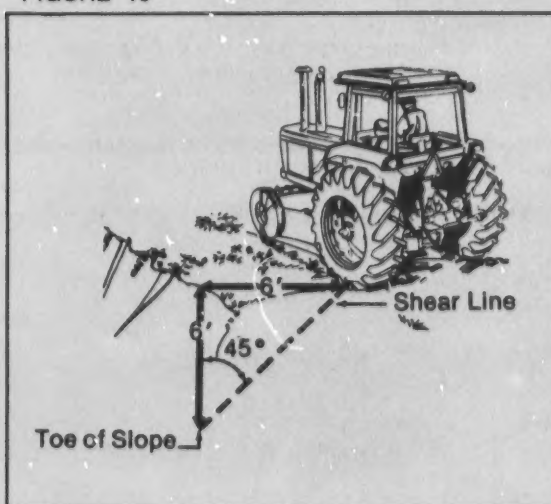
(NOTE: If equipment weaves back and forth at high speeds, the tractor will weave also, and the operator may lose control.)

5. Stay away from ditches and riverbanks

(NOTE: A good rule of thumb is to stay as far away from the bank as the ditch is deep. The weight of the tractor can cave in the bank if the shear line is crossed or approached. See Figure 19.)

EXAMPLE:

FIGURE 19



Used with permission of Deere and Company, Moline, Illinois.

INFORMATION SHEET

6. Operate front-end loaders with bucket as low as is practical (Figures 20 and 21)

EXAMPLES:

FIGURE 20

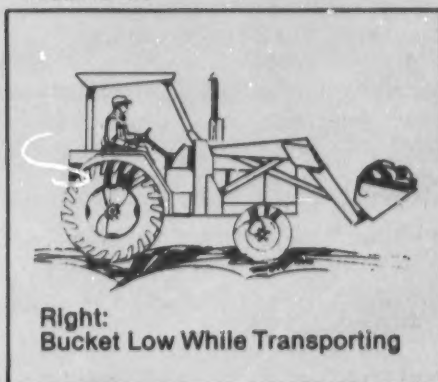
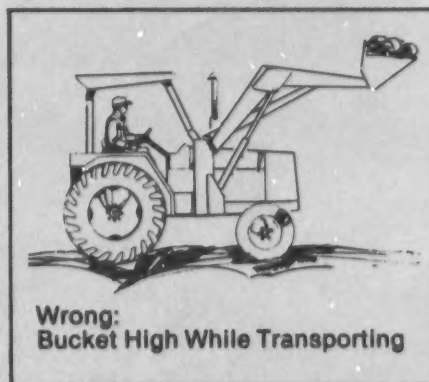


FIGURE 21



Figures 20 and 21 used with permission of Deere and Company, Moline, Illinois.

7. Make turns slowly, especially on rough terrain

B. Rear overruns

1. Hitch towed loads only to drawbar

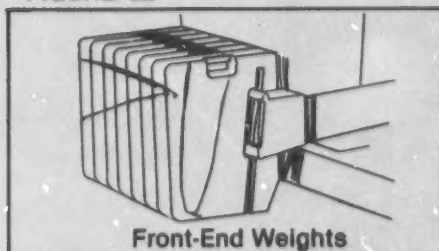
(NOTE: If the hitch point is raised above the recommended height, or if the load is attached to any other point but the drawbar, the chances of a backward upset are greatly increased.)

2. Add front-end weights to counterbalance heavy rear-mounted implements and heavy drawbar loads (Figure 22)

(NOTE: Check owner's manual for specifications on front-end weights.)

EXAMPLE:

FIGURE 22



Used with permission of Deere and Company, Moline, Illinois.

INFORMATION SHEET

3. Start forward motion slowly

(NOTE: Gunning the engine and jerking the foot off the clutch to start a heavy load is one of the surest ways to tip a tractor over backward.)

4. Brake cautiously if you must back down a grade

(NOTE: If a steep grade must be climbed, back the tractor up the grade and come down by driving forward, if possible.)

5. Plan for safe forward uphill pulls

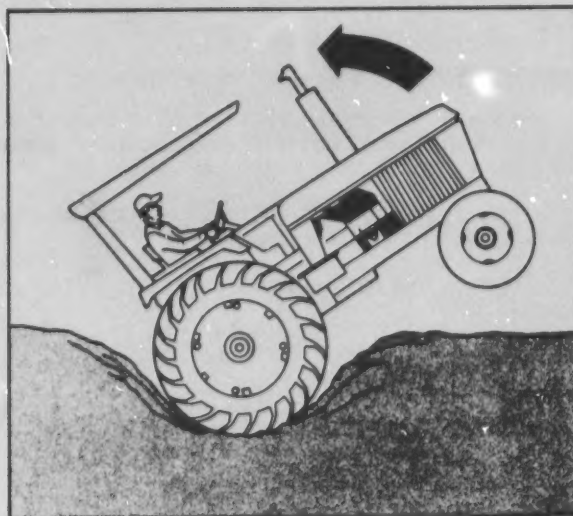
6. Back tractor out of mud or pull out with another tractor

7. Back out if the drive wheels become lodged in a ditch

(NOTE: The tractor may tip backward when being driven forward out of a ditch. See Figure 23.)

EXAMPLE:

FIGURE 23



Used with permission of the American Association for Vocational Instructional Materials.

VIII. Safety precautions to observe when refueling equipment

- A. Turn off engine on gasoline or liquid propane (LP) engines
- B. Allow engine to cool off
- C. Do not fill tank *completely* full
- D. Replace fuel cap tightly

INFORMATION SHEET

- E. Do not smoke when refueling equipment
- F. Perform daily checks of tank and fuel lines for leaks
- G. Make sure that a fire extinguisher is readily available
- IX. Safety precautions to observe when handling farm animals
 - A. Have adequate restraining and handling facilities
 - B. Keep livestock equipment in good repair
 - C. Be calm and deliberate when working around livestock
(CAUTION: Speak gently, and do not startle or abuse animals.)
 - D. Watch for sudden movements of animals
EXAMPLES: Butting, kicking, sudden charging
 - E. Refrain from scaring, teasing, or mistreating animals
(NOTE: Caution young workers or children about reaching into pens or through fences to pet or feed animals.)
 - F. Stay away from animals that seem angry or frightened
 - G. Beware of mature male breeding animals and females with young
EXAMPLES: Bulls, boars, rams, sows with pigs, cows with calves, ewes with lambs
 - H. Keep nonworking bystanders and children safely back from livestock working areas
 - I. Wear safety shoes or boots, head protection, and hand protection
 - J. Never tie a lead strap or line to your body
 - K. Keep animal facilities clean and free of hazards that could cause tripping
 - L. Put utensils, tools, and equipment away after use
 - M. Watch your step on slippery surfaces

AGRICULTURAL SAFETY
UNIT IIASSIGNMENT SHEET #1 — IDENTIFY HAND SIGNALS
USED IN MACHINERY OPERATION COMMUNICATIONS

NAME _____

SCORE _____

Proper hand signal communication when working with machinery is very critical for the safety of all concerned. Persons on the ground may be required to assist in equipment attachment, thus making it essential to communicate the correct message to the operator.

Review the signals illustrated below. Identify each signal by writing in the blanks the message being communicated.



A. _____



B. _____



C. _____



D. _____

ASSIGNMENT SHEET #1



E. _____



F. _____



G. _____



H. _____

ASSIGNMENT SHEET #1



I. _____



J. _____



K. _____

Figures A-K in this assignment sheet used with permission of Deere and Company, Moline, Illinois.

AGRICULTURAL SAFETY
UNIT II

ASSIGNMENT SHEET #2 — MAKE RECOMMENDATIONS
TO CORRECT SAFETY HAZARDS

NAME _____

SCORE _____

The farm home and farmstead can be a safe and enjoyable place to work if from time to time the owner checks for safety hazards that may exist.

Use the surveys on the following pages to check for safety hazards. Complete the surveys at your home or at a location designated by your instructor.

ASSIGNMENT SHEET #2

SURVEY #1 — HOME SAFETY

Name _____

Score _____

Possible Hazards	Yes	No	What can be done to improve the situation?
Are the porch steps in good repair?			
Are ladders in good repair?			
Are all stairways in good repair?			
Are there handrails for stairways?			
Are your rugs skid-proof?			
Are floors clear of toys and other tripping hazards?			
Are handles of cooking utensils turned toward the back of the stove?			
Are paint or oily rags stored in airtight metal containers?			
Are basements, closets, and attics kept clear of rubbish and flammable materials?			
Are petroleum fuels stored away from buildings?			
Are sharp knives kept in a rack?			
Are poisons and medicines clearly labeled and stored out of reach of children?			
Are water and grease spills wiped up immediately?			
Is a family member qualified to give first aid?			
Is there an equipped first-aid kit in the home?			
Are ladders properly and safely stored?			

ASSIGNMENT SHEET #2

Possible Hazards	Yes	No	What can be done to improve the situation?
Are guns unloaded and the ammunition and guns stored safely away from children?			
Are doors removed from old refrigerators that could be a hazard for children?			
Are hammer and ax heads secure and handles in good condition?			
Are full-length glass doors properly marked?			
Are tubs and showers safeguarded against slips and falls?			
Are emergency numbers posted near phones?			

Source: Oklahoma 4-H Safety Program.

ASSIGNMENT SHEET #2

SURVEY #2 — BUILDING AND YARD SAFETY

Name _____

Score _____

Possible Hazards	Yes	No	What can be done to improve the situation?
To prevent carbon monoxide poisoning, are garage doors opened before the engines are started?			
Is the yard kept free of rusty wire, nails, tin cans, and broken glass?			
Are doors and gates kept in repair in the barn and yard?			
Are areas around farm buildings free of deep holes?			
Are pitchfork tines and rake teeth pointed into the ground when left temporarily?			
Is there a definite place for each tool when not in use?			
Are dangerous tools kept away from play areas?			
Are metal roofs equipped with at least four lightning arresters or ground wires, one at each corner?			
Are lawnmower guards and shields left in place?			

Source: Oklahoma 4-H Safety Program.

ASSIGNMENT SHEET #2

SURVEY #3 — MACHINERY SAFETY

Name _____

Score _____

Possible Hazards	Yes	No	What can be done to improve the situation?
Are machines stopped while being oiled, cleaned, or adjusted?			
Are guards and shields kept in place on all machines at all times?			
Do operators make certain that no one is in front or behind before starting engine or backing any machine or vehicle?			
Are passengers kept from riding on farm machinery?			
Is the engine stopped and allowed to cool before the fuel tank is refilled?			
Do workers avoid wearing loose-fitting or torn clothing and gloves around machinery?			
Do workers avoid climbing over or around a running combine?			
Is the gear shift lever in neutral before starting the engine?			
Are the tractor and power take-off stopped before getting off the tractor?			
Are tractors and implements equipped with SMV emblems?			
Are steep hills and irregular slopes that might cause the tractor to overturn avoided?			
Is operating a tractor in a closed building avoided?			
Is there a fire extinguisher on every self-propelled piece of equipment?			

Source: Oklahoma 4-H Safety Program.

ASSIGNMENT SHEET #2

SURVEY #4 — ELECTRICAL SAFETY

Name _____

Score _____

Possible Hazards	Yes	No	What can be done to improve the situation?
Is current shut off before a new fuse or breaker is installed?			
Are electric irons, toasters, and other electrical equipment disconnected when not in use?			
Are faulty appliances repaired at once?			
Do you avoid touching light fixtures or cords while standing in wet places?			
Are all electric motors grounded?			
Are proper cords used for outside work?			
Are frayed and worn cords repaired or replaced when needed?			
Are fallen electric wires reported to the proper authority?			

Source: Oklahoma 4-H Safety Program.

ASSIGNMENT SHEET #2

SURVEY #5 — FIRE SAFETY

Name _____

Score _____

Possible Hazards	Yes	No	What can be done to improve the situation?
Are matches kept in metal containers and out of reach of children?			
Do you avoid using kerosene or gasoline to start fires?			
Is gasoline stored in properly marked red safety cans?			
Is gasoline stored at a safe distance from buildings?			
Is smoking in bed, near gasoline, and in the barn forbidden?			
Are grass and weeds cut short around the home, barn, or other buildings?			
Is a first-aid kit available for treatment of burns or other injuries?			
Is an approved fire extinguisher placed conveniently near any location of special fire hazard?			
Do the family and employees know how to use fire extinguishers?			
Is there enough garden hose and adequate supply of buckets for carrying water during a fire?			
Are there ladders long enough to reach the roof for rescuing members of the family from the home in case of fire?			
Is soot cleaned out of chimneys and pipes frequently?			

ASSIGNMENT SHEET #2

Possible Hazards	Yes	No	What can be done to improve the situation?
Is there a definite plan of action for a fire emergency?			
Is the number of the nearest fire department posted prominently near the phone?			
Are there fire guards around pastures and hay meadows?			
Is there a smoke detector in the home?			

Source: Oklahoma 4-H Safety Program.

(NOTE: Although the material in this assignment sheet was taken from the Oklahoma 4-H Safety Program, it has been revised extensively by the authors.)

AGRICULTURAL SAFETY
UNIT II

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

- A. Move toward me — follow me
- B. Raise equipment
- C. Stop
- D. Move out—take off
- E. Speed it up
- F. Start the engine
- G. Lower equipment
- H. This far to go
- I. Stop the engine
- J. Come to me
- K. Slow it down

Assignment Sheet #2 — Evaluated to the satisfaction of the instructor

AGRICULTURAL SAFETY
UNIT II

TEST

NAME _____

SCORE _____

1. Define terms associated with agricultural safety.

- a. Accident — _____

- b. Unsafe condition — _____

- c. Unsafe action — _____

- d. Safety hazard — _____

2. List major agricultural safety areas.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____

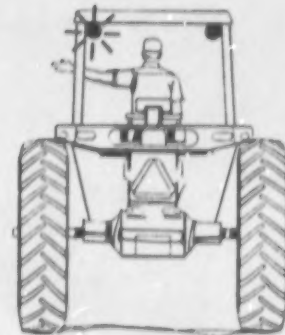
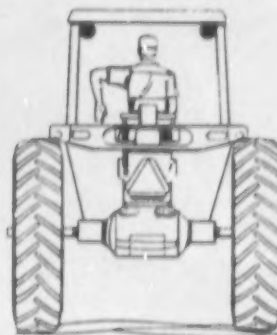
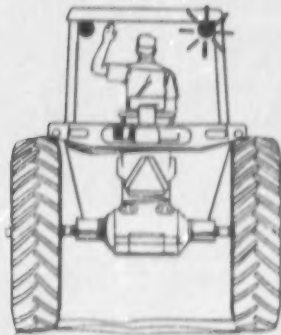
TEST

3. Identify standard hand signals used when operating farm equipment on public roads. Write the correct names in the blanks.

Stop

Left turn

Right turn



a. _____ b. _____ c. _____

4. Label hand signals used in machinery operation communications.



a. _____ b. _____

TEST



c. _____



d. _____



e. _____



f. _____



g. _____



h. _____

TEST



i. _____



j. _____



k. _____

5. State safety precautions to observe when operating general farm machinery and equipment.

- a. _____

- b. _____

- c. _____

TEST

- d. _____

- e. _____

- f. _____

- g. _____

- h. _____

6. Select from the following list regulations concerning use of the slow-moving vehicle (SMV) emblem. Write an "X" in the blank before each correct answer.

- ____a. Must be mounted so that bottom edge is 2 to 6 feet above the ground
- ____b. Must be mounted on front and rear of all farm equipment
- ____c. Must be mounted so that emblem is lighted at night
- ____d. Must be mounted point up in plain sight of traffic approaching from rear
- ____e. Required on all vehicles that move 25 miles per hour or less on public roads
- ____f. Must be bolted in all three corners
- ____g. Must be displayed in addition to any lighting devices or other equipment required by law
- ____h. Must be displayed day and night
- ____i. Not required on equipment with flashing lights

TEST

7. Distinguish between safe practices for operating tractor to prevent side overturns and safe practices for operating tractor to prevent rear overturns. Write an "S" before practices to prevent side overturns, and write an "R" before practices to prevent rear overturns.

- ____a. Widen wheel base to widest setting possible for job to be done
- ____b. Lock brake pedals together before driving at transport speeds
- ____c. Back out if the drive wheels become lodged in a ditch
- ____d. Make turns slowly, especially on rough terrain
- ____e. Operate front-end loaders with bucket as low as is practical
- ____f. Restrict speed according to operating conditions
- ____g. Back tractor out of mud or pull out with another tractor
- ____h. Plan for safe forward uphill pulls
- ____i. Pull heavy loads and equipment at safe speeds
- ____j. Hitch towed loads only to drawbar
- ____k. Stay away from ditches and riverbanks
- ____l. Add front-end weights to counterbalance heavy rear-mounted implements and heavy drawbar loads
- ____m. Start forward motion slowly
- ____n. Brake cautiously if you must back down a grade

8. State safety precautions to observe when refueling equipment.

- a. _____

- b. _____

- c. _____

TEST

- d. _____
- _____
- e. _____
- _____
- f. _____
- _____
- g. _____
- _____

9. State safety precautions to observe when handling farm animals.

- a. _____
- _____
- b. _____
- _____
- c. _____
- _____
- d. _____
- _____
- e. _____
- _____
- f. _____
- _____
- g. _____
- _____
- h. _____
- _____

TEST

- i. _____

- j. _____

- k. _____

- l. _____

- m. _____

(NOTE: Test question 10 lists the assignment sheet. It is an important part of this test. If it has not been completed, check with your instructor.)

10. Make recommendations to correct safety hazards.

AGRICULTURAL SAFETY
UNIT II

ANSWERS TO TEST

1.
 - a. Accident — Unexpected or undesired event that interrupts work routines and often results in injury or loss
 - b. Unsafe condition — Work condition or factor in the work environment or situation that has the potential to cause an accident
 - c. Unsafe action — Work process or factor of human activity in the work situation that has the potential to cause an accident
 - d. Safety hazard — Condition that often causes accidents
2.

a. Machinery safety	d. Electrical safety
b. Home safety	e. Fire safety
c. Building and yard safety	f. Livestock safety
3.
 - a. Right turn
 - b. Stop
 - c. Left turn
4.

a. Raise equipment	g. Slow it down
b. This far to go	h. Start the engine
c. Lower equipment	i. Come to me
d. Speed it up	j. Move out—take off
e. Stop	k. Stop the engine
f. Move toward me—follow me	
5.
 - a. Keep all guards and shields in place
 - b. Dress properly
 - c. Take breaks
 - d. Avoid situations that can pinch, wrap, shear, crush, or pull in

ANSWERS TO TEST

- e. Be aware of overhead electrical lines when handling long, vertical objects or operating tall equipment, or equipment with antennas
 - f. Always turn off machines before working on them or making adjustments
 - g. Before leaving self-propelled equipment, set the brakes or place in PARK
 - h. Never operate a machine on which you have not received extensive training
6. a, d, e, g, h
7. a. S e. S i. S m. R
 b. S f. S j. R n. R
 c. R g. R k. S
 d. S h. R l. R
8. a. Turn off engine on gasoline or liquid propane (LP) engines
- b. Allow engine to cool off
- c. Do not fill tank *completely* full
- d. Replace fuel cap tightly
- e. Do not smoke when refueling equipment
- f. Perform daily checks of tank and fuel lines for leaks
- g. Make sure that a fire extinguisher is readily available
9. a. Have adequate restraining and handling facilities
- b. Keep livestock equipment in good repair
- c. Be calm and deliberate when working around livestock
- d. Watch for sudden movements of animals
- e. Refrain from scaring, teasing, or mistreating animals
- f. Stay away from animals that seem angry or frightened

ANSWERS TO TEST

- g. Beware of mature male breeding animals and females with young
 - h. Keep nonworking bystanders and children safely back from livestock working areas
 - i. Wear safety shoes or boots, head protection, and hand protection
 - j. *Never* tie a lead strap or line to your body
 - k. Keep animal facilities clean and free of hazards that could cause tripping
 - l. Put utensils, tools, and equipment away after use
 - m. Watch your step on slippery surfaces
10. Evaluated to the satisfaction of the instructor

INTRODUCTION TO FUTURE FARMERS OF AMERICA UNIT I

UNIT OBJECTIVE

After completing this unit, the student should be able to use the *Official FFA Manual* to answer questions and to make decisions regarding the roles and responsibilities of an active FFA member. The student should also be able to participate in an FFA meeting. The student will show this knowledge by completing the assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with Future Farmers of America.
2. State the purposes of the State FFA Association.
3. List the official Oklahoma FFA publication.
4. List names of state FFA officers and selected members of state vocational agriculture staff.
5. Select from a list requirements for FFA membership.
6. Select from a list types of FFA membership.
7. State proper uses of the FFA jacket.
8. State the code of ethics for FFA members.
9. List the essentials of a good chapter.
10. List examples of activities that a local chapter can participate in or sponsor during National FFA Week.
11. List characteristics of a good FFA meeting.
12. Recite the FFA motto.
13. Recite the FFA creed.
14. Attend an FFA chapter meeting.
15. Use the *Official FFA Manual*.
16. Prepare for FFA Greenhand Quiz contest.

INTRODUCTION TO FUTURE FARMERS OF AMERICA
UNIT I

SUGGESTED ACTIVITIES

- I. Unit contents
 - A. Objective sheet
 - B. Suggested activities
 - C. Information sheet
 - D. Assignment sheets
 - 1. Assignment Sheet #1 — Recite the FFA Motto
 - 2. Assignment Sheet #2 — Recite the FFA Creed
 - 3. Assignment Sheet #3 — Attend an FFA Chapter Meeting
 - 4. Assignment Sheet #4 — Use the *Official FFA Manual*
 - 5. Assignment Sheet #5 — Prepare for FFA Greenhand Quiz Contest
 - E. Answers to assignment sheets
 - F. Test
 - G. Answers to test
- II. Instructor's guide
 - A. Obtain materials to supplement unit.
 - 1. Films
 - a. *FFA — Ag's New Generation*. Color, 25 minutes. Available from Venard Films, 1009 Highview Road, East Peoria, Illinois 61654.
 - b. *Food for America*. Color, 5 minutes. Available on a free-loan basis from Venard Films, 1009 Highview Road, East Peoria, Illinois 61654.

(NOTE: The number of these films in circulation is very limited. Orders should be placed several months in advance. This film is also available for purchase from the National FFA Supply Service, National FFA Center, 5632 Mount Vernon Memorial Highway, P.O. Box 15159, Alexandria, Virginia 22309. The 1984 price is \$37.50, plus \$1.25 handling charges. *Food for America* is suitable for use in FFA exhibits as well as for showing to groups of any age. The film uses a giant cheeseburger to explain how the parts of the cheeseburger are produced on the farm and processed for the consumer.)

SUGGESTED ACTIVITIES

- c. *Building Our American Communities*. Color, 30 minutes, 1979. Available from Venard Films, 1009 Highview Road, East Peoria, Illinois 61654.

(NOTE: The three films above are available on a free-loan basis to Oklahoma teachers. Oklahoma teachers may order from Oklahoma State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center Film Library, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074. Out-of-state teachers should order from the address listed above.)

- d. *Education Through Experience* and *Stars Over America*. Color, 20 minutes. Available for purchase from FFA Supply Service, National FFA Center, 5632 Mount Vernon Memorial Highway, P.O. Box 15160, Alexandria, Virginia 22309.

2. *Official FFA Manual* — Purchase one copy for each person in the class. Order from the State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.
3. *Student Handbook* — Purchase a minimum of five copies from the State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.

- B. Read the first chapter in the *Student Handbook* to help prepare you to teach this unit.
- C. Introduce unit by helping students focus on the importance of being FFA members.

SUGGESTIONS:

- Show film *Stars Over America* to focus on the importance of FFA and to illustrate that the 1982 stars shown in the film started as Greenhands.
 - Help students identify former FFA members that are now farming in the community; show how FFA helped them.
 - Explain that FFA is an integral part of the vocational agriculture program, and that FFA allows students the opportunity to apply and practice skills that have been learned in the classroom and shop.
- D. Provide students with objective sheet.

SUGGESTED ACTIVITIES

- E. Discuss unit and specific objectives.

SUGGESTION:

- Assign students the first chapter in the *Student Handbook*.

- F. Provide students with information and assignment sheets.

- G. Discuss information and assignment sheets.

1. Use Information Sheet, Section I to discuss terms that need to be defined in this unit.
2. Discuss Information Sheet, Sections II through IV, showing students how the State FFA Association affects local chapters.

SUGGESTIONS:

- Provide students with copies of *The Outlook* to help them complete information about State FFA officers and selected state vocational agriculture staff requested in Section IV.
 - Make a list of FFA chapter activities that the local chapter will participate in during the school year. Explain the role that the State FFA Association will play.
 - Point out that individual members should encourage and assist the local reporter in submitting articles to *The Outlook*.
3. Use Information Sheet, Sections V and VI to help students learn the requirements for being an FFA member.

SUGGESTIONS:

- Inform students that as individuals meet requirements for membership, their names will be added to the membership.
 - To provide a basis for a discussion of the national scope of the organization, have students estimate how many national members there are. (At this writing, national membership is 482,611.)
4. Use Information Sheet, Section VII to help students learn the proper use of the FFA jacket.

SUGGESTION:

- Invite an upper class member to talk to the class about the importance of wearing the jacket: the jacket is a symbol of identification because the student's name and the name of the school are on the jacket; the jacket is symbolic of the Future Farmers of America organization, and no member should do anything that would destroy the image of the Future Farmers of America, or give the school or chapter a bad name.

SUGGESTED ACTIVITIES

5. Use Information Sheet, Section VIII to help the student develop self-respect and be a productive and useful citizen.

SUGGESTIONS:

- Invite a resource person (i.e., pastor, attorney) to explain purposes and meaning of a code of ethics.
- Have students develop posters illustrating various points of the code of ethics. Have a contest and select the best poster. Present an FFA tie to the winner of the poster contest. Good illustrations of posters are found in the *Student Handbook*.

6. Use Information Sheet, Sections IX and X to illustrate the importance of the chapter and the role of the chapter in the school and community.

SUGGESTIONS:

- Use the following poem to stress the importance of being an active member of the FFA chapter.

Are you an active member, the kind who would be missed,
 Or are you just satisfied that your name is on the list?
 Do you attend the meetings and mingle with the flock,
 Or do you stay at home and criticize and knock?
 Do you take an active part to help the work along,
 Or are you satisfied to be the kind who just belongs?
 Do you ever go and visit a member who is sick,
 Or do you leave the work to a few and talk about the clique?
 Think this over, member; you know right from wrong.
 Are you an active member, or do you just belong?

Anonymous

- Invite FFA chapter president to talk to class about what FFA has meant to his or her life.
- Show *Food for America* film to introduce Food for America program.

(NOTE: Food for America is a program to help FFA chapters join the effort to improve consumers' understanding of the agricultural industry. The Food for America program provides materials and ideas to help FFA members tell elementary school students the story behind the bountiful stocks of food and agricultural products on supermarket shelves.

SUGGESTED ACTIVITIES

Chapters that participate in the Food for America program can obtain exciting instructional materials, including films, lesson plans, and classroom activities about farming and the business of agriculture.

The materials and ideas for using them are free of charge from the National FFA Center. The materials were produced and are distributed using funds provided by special project sponsors of the National FFA Foundation, Inc.

It is easy and fun to participate in Food for America, and your chapter will be doing a service to the community and the nation's agriculture.)

- Have freshman class identify class projects that would support National FFA Week activities.
7. Combine Information Sheet, Section XI and Assignment Sheet #3 to illustrate the importance of FFA meetings.

SUGGESTIONS:

- Inform students that the FFA chapter meeting is the place where chapter business is conducted. Also stress the importance of FFA members' taking an active part in the meetings.
 - Encourage the students to attend the FFA monthly meeting. Have students complete Assignment Sheet #3. Discuss the assignment sheet the next day during class.
 - Show students an order of business from a previous FFA meeting. Help students develop ideas for an order of business for the next FFA meeting.
8. Use Assignment Sheets #1 and #2 to reinforce the meaning of vocational agriculture and FFA.

SUGGESTIONS:

- Place the FFA motto on the bulletin board or on the chalkboard one or two days before presenting the motto in class. Have each student recite the motto in class. Emphasize that all FFA members live by and practice the FFA motto in their daily lives.
- Provide ample time for students to recite the FFA creed in class. Work with the executive committee to conduct an FFA Creed Contest. Invite three individuals from the community to serve as judges and to select the top three winners. Give the first place winner an FFA jacket. Award the second place winner an FFA tie, and the third place winner an FFA T-shirt. Give all students who recite the creed a certificate. Have the first place FFA Creed Contest winner recite the creed to the senior class at the Parent/Member Banquet.

SUGGESTED ACTIVITIES

9. Hand out copies of the *Official FFA Manual* so that students may complete Assignment Sheets #4 and #5.

SUGGESTIONS:

- Help students learn to use the *Official FFA Manual* by locating answers to the questions in Assignment Sheet #2. Show students how to use the table of contents.
- Encourage students to study the questions on Assignment Sheet #4 to prepare themselves to complete Assignment Sheet #5. Hold an FFA Greenhand Quiz contest using questions from Assignment Sheet #5. Use FFA officers as judges, and present an FFA scrapbook to the winner.

H. Give test.

III. Unit references

- A. *Official FFA Manual*. Alexandria, Virginia: Future Farmers of America, 1983.
- B. *The Future Farmers of America Organization, What It Is, What It Does*. Washington, D.C.: The Future Farmers of America Foundation, Inc., in cooperation with the Division of Vocational and Technical Education, U.S. Office of Education, n.d.
- C. *Vocational Agriculture and the FFA*. Washington, D.C.: The Future Farmers of America, in cooperation with the Agricultural Education Branch of the Office of Education, Department of Health, Education, and Welfare, n.d.

INTRODUCTION TO FUTURE FARMERS OF AMERICA UNIT I

INFORMATION SHEET

I. Terms and definitions

- A. FFA chapter — Official local body of the FFA organization; place where members assemble to conduct and manage the chapter business
- B. Executive Committee — Elected officers and advisor responsible for guiding the FFA organization
- C. FFA member — Individual meeting the requirements for membership in the FFA and winning majority approval of the membership
- D. Supervised Occupational Experience (SOE) Program — Agricultural experiences that members put into practice under the supervision of an advisor

(NOTE: SOE Programs may include skills and activities learned in the classroom, laboratory, and shop.)
- E. Paraphernalia — Equipment and materials necessary for conducting an official FFA meeting
- F. Order of business — Activities that are to be followed at all FFA meetings
- G. Parliamentary procedure — Rules that allow FFA members to transact chapter business in an orderly manner using *Robert's Rules of Order*

II. Purposes of the State FFA Association

- A. Providing leadership to local chapters
- B. Conducting State FFA Convention

(NOTE: The State FFA Convention is always held in April in Oklahoma City. Each chapter is responsible for having two delegates on the convention floor at all times in order to transact state business.)
- C. Conducting leadership training sessions for local officers
- D. Conducting public speaking contests
- E. Representing the state at regional and national FFA events

III. Official Oklahoma FFA publication — *The Outlook*

(NOTE: *The Outlook* is the official state FFA publication. It is published five times a year by the state FFA office. It is the responsibility of chapter FFA reporters to submit articles to the executive secretary for publishing in *The Outlook*.)

INFORMATION SHEET

IV. State FFA officers and vocational agriculture staff

(NOTE: The names of FFA officers and vocational agriculture staff change yearly. Ask your instructor for a current copy of *The Outlook*, and use it to fill in the names of the following officers and staff members.)

- A. President _____
- B. Secretary _____
- C. Reporter _____
- D. Vice-President (Northwest) _____
- E. Vice-President (Northeast) _____
- F. Vice-President (Central) _____
- G. Vice-President (Southwest) _____
- H. Vice-President (Southeast) _____
- I. Advisor _____
- J. Executive Secretary _____
- K. District Supervisor for your area _____

V. Requirements for FFA membership

- A. Must be 14 to 21 years old
- B. Must be enrolled in a vocational agriculture class
- C. Must remain in good standing with local chapter
- D. Must attend all FFA meetings
- E. Must have a Supervised Occupational Experience Program

(NOTE: Some local chapters may have additional requirements. Please ask your instructor if there are additional requirements for your chapter.)

VI. Types of FFA membership

- A. Active
- B. Honorary
- C. Alumni
- D. Collegiate

INFORMATION SHEET

VII. Proper uses of the FFA jacket

- A. The jacket should only be worn by members.
- B. It should be kept clean and neat.
- C. The jacket should have only a large emblem on the back and a small emblem on the front; the name of the State Association and the name of the local chapter on the back; and the name of the individual and one office or honor on the front.
- D. The jacket should be worn on official occasions with the zipper fastened to the top. The collar should be turned down, and the cuffs buttoned.
- E. The jacket should be worn by officers and members on *all* official FFA occasions, as well as other occasions where the chapter or State Association is represented. It may be worn to school and other appropriate places.
- F. The jacket should only be worn to places that are appropriate for members to visit.
- G. School letters and insignia of other organizations should not be attached to or worn on the jacket.
- H. When the jacket becomes faded and worn, it should be discarded or the emblems and lettering removed.
- I. The emblems and lettering should be removed if the jacket is given or sold to a nonmember.
- J. A member always acts like a lady or gentleman when wearing the jacket.
- K. Members should refrain from use of tobacco and alcohol while wearing the FFA jacket or officially representing the organization.
- L. All chapter degree, officer, and award medals should be worn beneath the name on the right side of the jacket, with the exception that a single State Farmer charm and American Farmer key should be worn above the name or attached to a standard key chain. No more than three medals should be worn on the jacket; these should represent the highest degree earned, the highest office held, and the highest award earned by the member.

Used with permission of the Future Farmers of America, National FFA Center, Alexandria, Virginia.

VIII. Code of ethics for FFA members

- A. Dress neatly and appropriately for the occasion.

INFORMATION SHEET

- B. Show respect for the rights of others and be courteous at all times.
- C. Be honest and do not take unfair advantage of others.
- D. Respect property of others.
- E. Refrain from loud, boisterous talk, swearing, and horseplay.
- F. Demonstrate sportsmanship in the show ring, judging contests, and meetings.
- G. Attend meetings promptly and respect the opinions of others in discussion.
- H. Take pride in the FFA organization, activities, farming programs, exhibits, and in the occupation of farming or ranching.
- I. Share with others experiences and knowledge gained by attending national and state meetings.

Adapted with permission of the Future Farmers of America, National FFA Center, Alexandria, Virginia.

IX. Essentials of a good chapter

- A. Knowledge of the FFA on the part of every member.
- B. Capable officers and leaders.
- C. Responsibilities shared by all members in chapter activities.
- D. Challenging program of activities.
- E. Adequate financing for chapter activities.
- F. Proper paraphernalia, equipment, and records.
- G. Well-planned, regularly held chapter meetings.
- H. Support by school officials and community leaders.

Adapted with permission of the Future Farmers of America, National FFA Center, Alexandria, Virginia.

X. Examples of National FFA Week activities that a local chapter can participate in or sponsor

- A. Radio and television programs
- B. FFA Week articles in newspapers

INFORMATION SHEET

- C. School assemblies
- D. Civic club programs
- E. Parent and member banquet
- F. Poster displays in town
- G. Church attendance as a group
- H. Window displays
- I. Food for America program

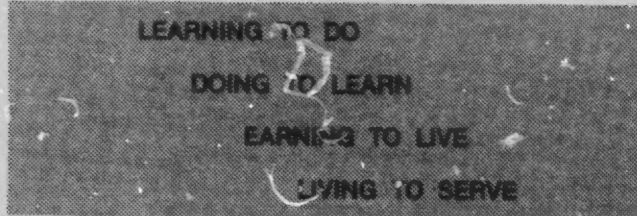
(NOTE: List additional activities below.)

XI. Characteristics of a good FFA meeting

- A. Uses an executive committee to assure careful planning in advance of the meeting time
- B. Starts and finishes on time
- C. Proceeds according to an established order of business
- D. Is conducted according to accepted parliamentary procedure
- E. Includes well-prepared committees', secretary's, and treasurer's reports
- F. Is conducted by officers familiar with their duties and responsibilities
- G. Commands the interest and attention of all members
- H. Provides for maximum member participation and for development of cooperative attitudes among members
- I. Includes business, entertainment features, and refreshments
- J. Prevents monotony and time wasting
- K. Contains a minimum of active participation by the advisor

INFORMATION SHEET

XII. FFA motto



Used with permission of the Future Farmers of America, National FFA Center, Alexandria, Virginia.

XIII. FFA Creed

(NOTE: The FFA creed was written by E. M. Tiffany, and adopted at the Third National Convention of the FFA. It was revised at the 38th Convention.)

I believe in the future of farming, with faith born not of words but of deeds — achievements won by the present and past generations of agriculturists; in the promise of better days through better ways, even as the better things we now enjoy have come to us from the struggles of former years.

I believe that to live and work on a good farm, or to be engaged in other agricultural pursuit, is pleasant as well as challenging; for I know the joys and discomforts of agricultural life and hold an inborn fondness for those associations which, even in hours of discouragement, I cannot deny.

I believe in leadership from ourselves and respect from others. I believe in my own ability to work efficiently and think clearly, with such knowledge and skill as I can secure, and in the ability of progressive agriculturists to serve our own and the public interest in producing and marketing the product of our toil.

I believe in less dependence on begging and more power in bargaining; in the life abundant and enough honest wealth to help make it so — for others as well as myself; in less need for charity and more of it when needed; in being happy myself and playing square with those whose happiness depends upon me.

I believe that rural America can and will hold true to the best traditions of our national life and that I can exert an influence in my home and community which will stand solid for my part in that inspiring task.

Used with permission of the Future Farmers of America, National FFA Center, Alexandria, Virginia.

**INTRODUCTION TO FUTURE FARMERS OF AMERICA
UNIT I****ASSIGNMENT SHEET #1 — RECITE THE FFA MOTTO**

NAME _____ SCORE _____

The FFA motto is what every Future Farmer believes and practices each day. As a first year vocational agriculture student and a Greenhand in the Future Farmers of America, it is necessary for you to memorize the FFA motto and to practice saying the motto with meaning and sincerity.

The motto is written below. Read the FFA motto aloud several times, and then practice saying the motto without looking at the words.

The FFA Motto**LEARNING TO DO****DOING TO LEARN****EARNING TO LIVE****LIVING TO SERVE**

Used with permission of the Future Farmers of America, National FFA Center, Alexandria, Virginia.

After you have practiced saying the FFA motto without looking at the words, practice saying it when looking into a mirror. This practice allows you to give meaning to the words. Be prepared to recite the FFA motto to the class when called upon by the instructor.

INTRODUCTION TO FUTURE FARMERS OF AMERICA
UNIT I

ASSIGNMENT SHEET #2 — RECITE THE FFA CREED

NAME _____

SCORE _____

The FFA creed has been recited by every individual who has been a member of the Future Farmers of America organization. The creed expresses the true meaning of agriculture and the role that the FFA member plays in making our country and community a better place to live and to work. The creed was written by E. M. Tiffany, and the membership attending the Third National FFA Convention adopted it in 1930.

It is best to learn the creed a paragraph at a time. Start with the first paragraph on the following page and learn it. Then move on to the second paragraph. Repeat these steps with each paragraph. Learn to say the creed speaking slowly, but also learn to stress the important parts of each paragraph. It is best to practice saying the creed to someone. Ask your mother, father, brother or sister, or a friend to help you. Your instructor will require that you recite the creed to the class at some time.

(NOTE: In many instances, the FFA chapter holds an FFA creed contest and selects the person who did the best job of reciting the creed to represent the chapter in other competition.)

ASSIGNMENT SHEET #2

THE FFA CREED

I believe in the future of farming, with faith born not of words but of deeds — achievements won by the present and past generations of agriculturists; in the promise of better days through better ways, even as the better things we now enjoy have come to us from the struggles of former years.

I believe that to live and work on a good farm, or to be engaged in other agricultural pursuit, is pleasant as well as challenging; for I know the joys and discomforts of agricultural life and hold an inborn fondness for those associations which, even in hours of discouragement, I cannot deny.

I believe in leadership from ourselves and respect from others. I believe in my own ability to work efficiently and think clearly, with such knowledge and skill as I can secure, and in the ability of progressive agriculturists to serve our own and the public interest in producing and marketing the product of our toil.

I believe in less dependence on begging and more power in bargaining; in the life abundant and enough honest wealth to help make it so — for others as well as myself; in less need for charity and more of it when needed; in being happy myself and playing square with those whose happiness depends upon me.

I believe that rural America can and will hold true to the best traditions of our national life and that I can exert an influence in my home and community which will stand solid for my part in that inspiring task.

Used with permission of the Future Farmers of America, National FFA Center, Alexandria, Virginia.

INTRODUCTION TO FUTURE FARMERS OF AMERICA
UNIT I

ASSIGNMENT SHEET #3 — ATTEND AN FFA CHAPTER MEETING

NAME _____ SCORE _____

It is the responsibility of all FFA members to attend and participate in the local FFA chapter meetings. During the meetings, each member can express opinions and develop plans for improvement of the chapter. As a first-year vocational agriculture student, you have the opportunity to select the committees on which you wish to work. At the first meeting, you will probably not have a leadership role or do a lot of talking, but you will be learning how the meeting operates.

The purpose of this assignment sheet is to help you learn your part and to observe a meeting in practice. Learn your part before the first meeting. You will not have to recite the part by yourself, but you will be required to stand and say the part with the other FFA members.

PART I

Read the parts listed below several times; practice saying your part aloud without looking at the copy.

OPENING CEREMONY

President: Thank you. Future Farmers, why are we here?

(All members stand at third tap of gavel.)

Member response: *(In unison.)* To practice brotherhood, honor rural opportunities and responsibilities, and develop those qualities of leadership which a Future Farmer should possess.

(All are seated at one tap of gavel.)

CLOSING CEREMONY

(The president taps three times with gavel to call members to stand, face the flag at the reporter's station, and with their right hands over their hearts repeat the following pledge.)

In unison: I pledge allegiance to the Flag of the United States of America, and to the Republic for which it stands, one Nation under God, indivisible, with liberty and justice for all.

ASSIGNMENT SHEET #3

PART II

Answer the following questions about the FFA meeting you attended.

A. How many FFA members attended the meeting? _____

YES NO

B. Did all of the FFA officers know their parts from memory? ☐ ☐

C. Was chapter paraphernalia at each officer's station? ☐ ☐

D. Was the room set up as specified by the *Official FFA Manual*? ☐ ☐

E. Was the order of business made available to all members? ☐ ☐

F. Did the majority of the members participate in the meeting? ☐ ☐

G. Did the membership use parliamentary procedure in conducting the meeting? ☐ ☐

H. Did you enjoy attending? ☐ ☐

Why or why not? _____

I. Did you know your part and did you stand and recite the part with meaning and enthusiasm? ☐ ☐

J. Do you think you will be better prepared for the next meeting? ☐ ☐

K. What additional things will you need to work on before the next meeting?

L. What did you learn by attending the meeting? _____

INTRODUCTION TO FUTURE FARMERS OF AMERICA
UNIT IASSIGNMENT SHEET #4 — USE THE *OFFICIAL FFA MANUAL*

NAME _____ SCORE _____

The *Official FFA Manual* is the official publication of the Future Farmers of America. All FFA members and officers should be able to answer questions and make decisions about chapter activities. Your answers to questions and the decisions that you make should be based on facts found in the *Official FFA Manual*.

Use the most current *Official FFA Manual* to answer the questions listed below and on the following pages.

- A. What is the name of the National FFA Advisor?

- B. Who is the National Treasurer?

- C. What is the name of the person who is serving as National Executive Secretary of the Future Farmers of America?

- D. What city and state is the home of the National FFA Center?

- E. The Future Farmers of America was organized in what month and year?

- F. What is the FFA?

- G. How many National FFA officers are elected annually?

- H. What are the titles of the elected officers of the National FFA?

ASSIGNMENT SHEET #4

I. The National FFA organization is governed by what type of a body?

J. What is the name of the official FFA magazine?

K. What year was the FFA Supply Service created?

L. In what year did the FFA start publishing the official FFA magazine?

M. Where is the headquarters of the National FFA organization?

N. How many FFA chapters are there?

O. What is the membership of the National FFA?

P. What is the address of the National FFA Supply Service?

Q. How many times per year is the National FFA magazine published?

R. Name the four styles of the FFA calendars.

S. What is the function of the National FFA Foundation, Incorporated?

ASSIGNMENT SHEET #4

T. What year was the National FFA Foundation, Incorporated, chartered?

U. How many members serve on the board of trustees of the FFA Foundation?

V. In what year was the FFA Alumni Association organized?

W. What is the purpose of FFA camps and leadership conferences?

X. What types of chapter awards and activities are available?

Y. What are the four functions of the FFA Judging Contests?

Z. How many FFA contests are there at the national level?

What are the names of the national FFA contests?

AA. What is the official FFA dress for male members?

ASSIGNMENT SHEET #4

BB. What is the official FFA dress for female members?

CC. What are the names of the two FFA public speaking contests?

DD. What is the purpose of the Star Awards?

EE. What are the names of the different types of FFA Star Awards?

FF. How many FFA chapters are there in the United States and Oklahoma?

Chapters in Unites States _____

Chapters in Oklahoma _____

GG. What are the names of the different FFA proficiency award areas?

ASSIGNMENT SHEET #4

HH. What is the FFA motto?

II. Who was the individual who wrote the FFA creed?

JJ. At what National FFA Convention was the FFA creed adopted?

KK. At what convention was the FFA creed revised?

LL. What is the first paragraph of the FFA creed?

MM. How many symbols make up the National FFA emblem?

Name the symbols and give a definition for each.

NN. What are the FFA colors?

ASSIGNMENT SHEET #4

OO. What are the words of the Pledge of Allegiance?

PP. What are the names of the four degrees of active membership in the FFA?

QQ. What degrees does the National organization confer on active members?

RR. What are the names of the offices of the chapter?

SS. What is the primary aim of the Future Farmers of America?

ASSIGNMENT SHEET #4

TT. For what specific purposes was the FFA organization formed?

UU. What is the purpose of the chapter program of activities?

VV. The FFA organization program of activities should be in several areas. What are the names of these areas?

ASSIGNMENT SHEET #4

WW. What is the correct room arrangement for an FFA meeting? (Draw and label the correct arrangement.)

XX. What does the FFA gavel symbolize?

YY. What do two taps of the gavel mean?

ZZ. What do three taps of the gavel mean?

AAA. Why does the FFA chapter have honorary membership?

BBB. What are the symbols of the FFA officers' stations?

INTRODUCTION TO FUTURE FARMERS OF AMERICA
UNIT I

ASSIGNMENT SHEET #5 — PREPARE FOR FFA GREENHAND QUIZ CONTEST

NAME _____ SCORE _____

If you work hard and prepare for the Greenhand Quiz, you can earn the opportunity to represent your chapter at the Profession Improvement Meeting or District and State FFA Greenhand Contest.

In a previous assignment sheet, you used the *Official FFA Manual* and looked up answers to selected questions about the FFA. Study your answers for a few minutes, and then, without using the answers or the FFA manual, answer the following questions. Write your answers in the blanks, or circle the appropriate answer.

A. Who is the National FFA Advisor?

B. Who is the National FFA Treasurer?

C. Who is the Executive Secretary of the National FFA Association?

D. Where is the National FFA Center located?

1. Washington, D. C.
2. Virginia
3. Maryland
4. West Virginia

E. In what year was the Future Farmers of America organized?

1. 1931
2. 1928
3. 1930
4. 1927

ASSIGNMENT SHEET #5

F. How many elected national FFA offices are there? _____

G. What are the titles of the elected officers of the National FFA organization.

_____	_____
_____	_____
_____	_____
_____	_____

H. What is the name of the official FFA magazine? _____

I. How many times per year is the national FFA magazine published? _____

J. In what year was the National FFA Foundation, Inc. chartered?

1. 1958
2. 1934
3. 1944
4. 1928

K. How many FFA chapters are there in the United States? _____;
in Oklahoma? _____

L. What is the approximate membership in the National FFA? _____;
the Oklahoma FFA? _____

M. In what year was the FFA Alumni Association organized?

1. 1971
2. 1968
3. 1955
4. 1981

N. How many FFA contests are conducted at the National level?

ASSIGNMENT SHEET #5

O. What are the names of the two types of speaking contests?

P. What is the official FFA dress for male FFA members?

Q. What is the official FFA dress for female members?

R. The President of the FFA chapter uses the gavel while conducting meetings. What is the function of the gavel?

S. When the president taps the gavel two times, what should members do?

T. When the president taps the gavel three times, what should members do?

U. Why do FFA chapters have honorary memberships?

V. What are the symbols on the FFA emblem?

1.

2.

3.

4.

5.

ASSIGNMENT SHEET #5

W. What are the FFA colors? _____

X. What are the names of the four degrees of active membership in the FFA?

1. _____

2. _____

3. _____

4. _____

Y. What is the highest degree that the State Association can give? _____

Z. What is the highest degree that the National Association can confer on an active member?

AA. What are the elected offices of the local FFA chapter?

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

BB. Who wrote the FFA creed? _____

CC. In what year was the FFA creed adopted?

1. 1928

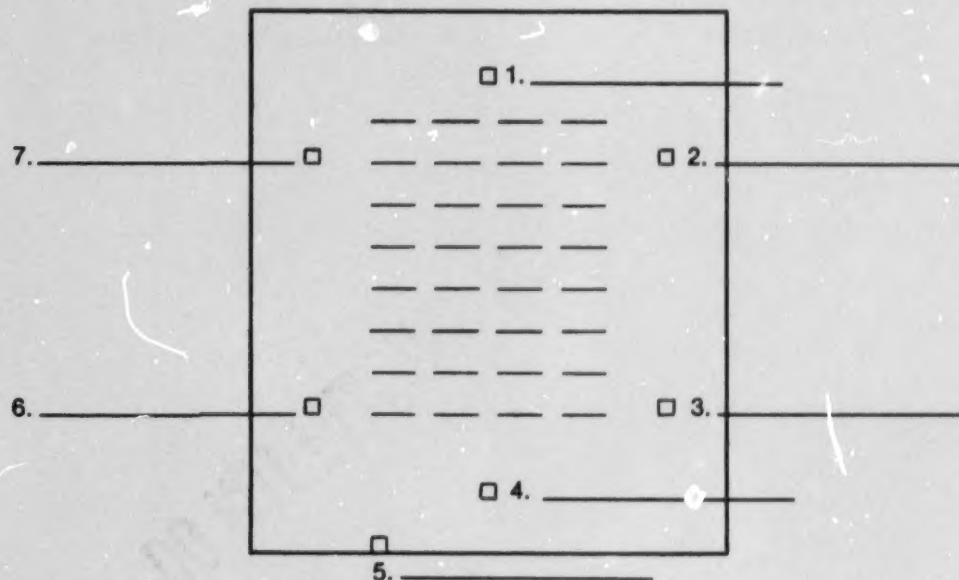
2. 1930

3. 1945

4. 1950

ASSIGNMENT SHEET #5

DD. Label the room arrangement illustrated below. Write the correct offices in the blanks.



Used with permission of the Future Farmers of America, National FFA Center, Alexandria, Virginia.

EE. What is the FFA motto?

INTRODUCTION TO FUTURE FARMERS OF AMERICA
UNIT I

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

(NOTE: Use the criteria below as an aid in evaluating the completed assignment sheet.)

- A. Did the student recite the FFA motto from memory?
- B. Did the student recite the FFA motto with meaning?

Assignment Sheet #2

(NOTE: Use the criteria below as an aid in evaluating the completed assignment sheet.)

- A. Did the student recite the FFA Creed from memory?
- B. Did the student make less than five mistakes?
- C. Did the student emphasize important points within the Creed?
- D. Did the student use good body mechanics and gestures?

Assignment Sheet #3

(NOTE: Use the criteria below as an aid in evaluating the completed assignment sheet.)

- A. Did the student attend the FFA meeting?
- B. Did the student participate in the meeting?
- C. Did the student know the parts for the opening and closing ceremonies?
- D. Did the student answer all of the questions on the assignment sheet?

Assignment Sheet #4

- A. Thane McCormick (acting advisor)
- B. Julian Campbell
- C. C. Coleman Harris
- D. Alexandria, Virginia
- E. November, 1928
- F. A national organization of students enrolled in vocational agriculture or agribusiness

ANSWERS TO ASSIGNMENT SHEETS

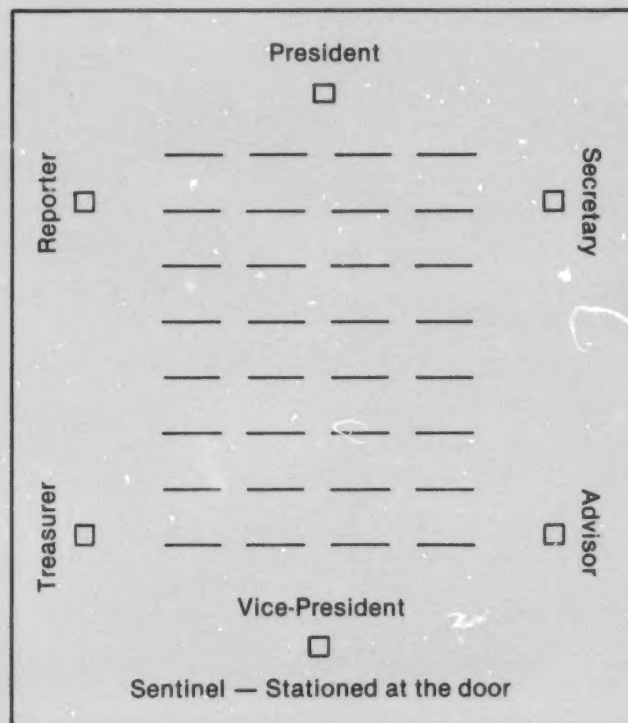
- G. Six
 - H. President; secretary; vice-president, western region; vice-president, central region; vice-president, eastern region; vice-president, southern region
 - I. Board of directors and six national officers
 - J. *The National FUTURE FARMER*
 - K. 1948
 - L. 1952
 - M. National FFA Center, Alexandria, Virginia
 - N. 8,000 chapters
 - O. 1/2 million
 - P. 5632 Mount Vernon Memorial Highway, P. O. Box 15160, Alexandria, Virginia 22309
 - Q. Six times per year
 - R. Home and office style, tent-shaped desk style, large poster style, vinyl wallet style
 - S. To cooperate in furthering the programs of FFA
 - T. 1944
 - U. Nineteen members
 - V. 1971
 - W. To build leaders
 - X. National Chapter Award, National Safety Award, Building our American Communities, Food for America, The President's Challenge
 - Y. Technical knowledge, ability to make sound judgments and to defend the decisions, ability to be a gracious winner or a good loser
 - Z. Nine contests; Agricultural Mechanics, Dairy Cattle Judging, Farm Business Management, Floriculture, Nursery/Landscape, Livestock Judging, Meats, Milk Quality and Dairy Foods, Poultry Judging
 - AA. Black slacks, white shirt, blue FFA tie, black shoes, black socks, official FFA jacket zipped to the top
 - BB. Black skirt, white blouse, FFA blue scarf, black shoes, official FFA jacket zipped to the top
- (NOTE: Black pants are allowed for outdoor FFA activities.)
- CC. Prepared Public Speaking, Extemporaneous Public Speaking

ANSWERS TO ASSIGNMENT SHEETS

- DD. To recognize outstanding achievement at chapter, state, and national levels
- EE. Star Greenhand, Star Chapter Farmer, Star Chapter Agribusinessman, Star State Farmer, Star State Agribusinessman, Star Farmer of America, Star Agribusinessman of America
- FF. 8,350 chapters in United States; 367 chapters in Oklahoma
- GG. Agricultural Electrification, Agricultural Mechanics, Agricultural Processing, Agricultural Sales and/or Service, Beef Production, Crop Production, Dairy Production, Diversified Livestock Production, Fish and Wildlife Management, Floriculture, Forest Management, Fruit and/or Vegetable Production, Home and/or Farmstead Improvement, Horse Proficiency, Nursery Operations, Outdoor Recreation, Placement in Agricultural Production, Poultry Production, Sheep Production, Soil and Water Management, Swine Production, Turf and Landscape Management
- HH. Learning to do, doing to learn, earning to live, living to serve
- II. E. M. Tiffany
- JJ. Third National FFA Convention
- KK. Thirty-eighth National Convention
- LL. I believe in the future of farming, with a faith born not of words but of deeds—achievements won by the present and past generations of agriculturists; in the promise of better days through better ways, even as the better things we now enjoy have come to us from the struggles of former years.
- MM. Five symbols
1. Cross section of an ear of corn — Represents common agricultural interests because corn is native to America and is grown in every state
 2. Rising sun — Signifies progress and the new day that will dawn when all farmers are educated and have learned to cooperate
 3. Plow — Symbolizes labor and tillage of the soil
 4. Eagle — Signifies the national scope of the organization
 5. Owl — Symbolizes knowledge and wisdom
 6. Letters "F-F-A" and words "vocational agriculture" signify the integral relationship of this educational program
- NN. National blue, corn gold
- OO. I pledge allegiance to the Flag of the United States of America and to the Republic for which it stands, one Nation under God, indivisible, with liberty and justice for all
- PP. Greenhand Degree, Chapter Farmer Degree, State Farmer Degree, American Farmer Degree

ANSWERS TO ASSIGNMENT SHEETS

- QQ. American Farmer, Star Farmer of America, Star Agribusinessman of America
- RR. President, vice-president, secretary, treasurer, reporter, sentinel
- SS. Development of agricultural leadership, cooperation, and citizenship
- TT. To develop competent and aggressive agricultural leadership; to create and nurture a love of agriculture life; to strengthen the confidence of students of vocational agriculture in themselves and their work; to create more interest in the intelligent choice of agricultural occupations; to encourage members in the development of individual occupational experience programs in agriculture and establishment in agricultural careers; to encourage members to improve the home and its surroundings; to participate in worthy undertakings for the improvement of the industry of agriculture; to develop character, train for useful citizenship, and foster patriotism; to participate in cooperative effort; to encourage and practice thrift; to encourage improvement in scholarship; to provide and encourage the development of organized recreational activities
- UU. Serves as a road map by setting goals and charting the course for reaching those goals
- VV. Supervised agricultural occupational experience; cooperation; community service; leadership; earnings, savings, and investments; conduct of meetings; scholarship; recreation; public relations; participation in state and national activities; alumni relations
- WW.



ANSWERS TO ASSIGNMENT SHEETS

- XX. Symbol of authority
- YY. Members come to order so that meeting may start
- ZZ. All members stand
- AAA. To recognize individuals for outstanding work and for the support they give the chapter;
to recognize outstanding achievements on behalf of the chapter
- BBB. 1. Owl — Advisor
2. Rising sun — President
3. Plow — Vice-president
4. Ear of corn — Secretary
5. American flag — Reporter
6. Bust of Washington — Treasurer
7. Shield of Friendship — Sentinel

Assignment Sheet #5

- A. Thane McCormick (acting advisor)
- B. Julian Campbell
- C. C. Coleman Harris
- D. 2
- E. 2
- F. Six
- G. President; vice-president, western region; vice-president, central region; vice-president, southern region; vice-president, eastern region; secretary
- H. *The National FUTURE FARMER*
- I. Six
- J. 3
- K. 8,350 in United States; 367 in Oklahoma

ANSWERS TO ASSIGNMENT SHEETS

- L. 482,611 in National FFA; 18,155 in Oklahoma FFA
- M. 1
- N. Nine
- O. Prepared Public Speaking, Extemporaneous Public Speaking
- P. Black slacks, white shirt, blue FFA tie, black shoes and socks, and the official FFA jacket zipped to the top
- Q. Black skirt, white blouse with official FFA blue scarf, black shoes, and official FFA jacket zipped to the top
- R. Symbol of authority
- S. Come to order
- T. Stand during the opening and the closing ceremonies
- U. To recognize individuals that have given outstanding service to the chapter
- V.
 - 1. Cross section of an ear of corn
 - 2. Rising sun
 - 3. Plow
 - 4. Eagle
 - 5. Owl
- W. National blue and corn gold
- X. Greenhand, Chapter Farmer, State Farmer, and American Farmer
- Y. State Farmer Degree
- Z. American Farmer Degree
- AA.
 - 1. President
 - 2. Vice-president
 - 3. Secretary
 - 4. Treasurer
 - 5. Reporter
 - 6. Sentinel

ANSWERS TO ASSIGNMENT SHEETS

BB. E. M. Tiffany

CC. 2

- DD. 1. President
2. Secretary
3. Advisor
4. Vice-president
5. Sentinel
6. Treasurer
7. Reporter

EE. Learning to do, doing to learn, earning to live, living to serve

INTRODUCTION TO FUTURE FARMERS OF AMERICA
UNIT I

TEST

NAME _____

SCORE _____

1. Match to their correct definitions terms associated with Future Farmers of America. Write the correct numbers in the blanks.

- | | |
|---|---|
| <p>_____a. Rules that allow FFA members to transact chapter business in an orderly manner using <i>Robert's Rules of Order</i></p> <p>_____b. Official local body of the FFA organization; place where members assemble to conduct and manage the chapter business</p> <p>_____c. Activities that are to be followed at all FFA meetings</p> <p>_____d. Elected officers and advisor responsible for guiding the FFA organization</p> <p>_____e. Equipment and materials necessary for conducting an official FFA meeting</p> <p>_____f. Individual meeting the requirements for membership in the FFA and winning majority approval of the membership</p> <p>_____g. Agricultural experiences that members put into practice under the supervision of an advisor</p> | <p>1. Supervised Occupational Experience (SOE) Program</p> <p>2. Order of business</p> <p>3. FFA chapter</p> <p>4. Executive Committee</p> <p>5. Parliamentary procedure</p> <p>6. FFA member</p> <p>7. Paraphernalia</p> |
|---|---|

2. State the purposes of the State FFA Association.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

3. List the official Oklahoma FFA publication. _____

TEST

4. List names of state FFA officers and selected members of state vocational agriculture staff.
- a. President _____
 - b. Vice-President Southeast District _____
 - c. Reporter _____
 - d. Vice-President Northwest District _____
 - e. Vice-President Northeast District _____
 - f. Secretary _____
 - g. Vice-President Southwest District _____
 - h. Vice-President Central District _____
 - i. Advisor _____
 - j. Executive Secretary _____
 - k. District Supervisor for your area _____
5. Select from the following list requirements for FFA membership. Write an "X" in the blank before each correct answer.
- ____ a. Must live on a farm
 - ____ b. Must be 14 to 21 years old
 - ____ c. Must attend all FFA meetings
 - ____ d. Must serve on five committees
 - ____ e. Must be enrolled in a vocational agriculture class
 - ____ f. Must have a Supervised Occupational Experience Program
 - ____ g. Must remain in good standing with local chapter
6. Select from the following list types of FFA membership. Write an "X" in the blank before each correct answer.
- ____ a. Active
 - ____ b. Associate
 - ____ c. Collegiate

TEST

- ____d. Inactive
- ____e. Honorary
- ____f. Regular
- ____g. Chapter Farmer
- ____h. Alumni

7. State four proper uses of the FFA jacket.

- a. _____

- b. _____

- c. _____

- d. _____

8. State six rules in the code of ethics for FFA members.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____

TEST

9. List four essentials of a good chapter.
- a. _____
 - b. _____
 - c. _____
 - d. _____
10. List two examples of activities that a local chapter can participate in or sponsor during National FFA Week.
- a. _____
 - b. _____
11. List four characteristics of a good FFA meeting.
- a. _____
 - b. _____
 - c. _____
 - d. _____

(NOTE: Test questions 12-16 list the assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

- 12. Recite the FFA motto.
- 13. Recite the FFA creed.
- 14. Attend an FFA chapter meeting.
- 15. Use the *Official FFA Manual*.
- 16. Prepare for FFA Greenhand Quiz contest.

INTRODUCTION TO FUTURE FARMERS OF AMERICA
UNIT I

ANSWERS TO TEST

1. a. 5 e. 7
 b. 3 f. 6
 c. 2 g. 1
 d. 4
2. a. Providing leadership to local chapters
 b. Conducting State FFA Convention
 c. Conducting leadership training sessions for local officers
 d. Conducting public speaking contests
 e. Representing the state at regional and national FFA events
3. *The Outlook*
4. Answers will have to be supplied by instructor using information in *The Outlook*
5. b, c, e, f, g
6. a, c, e, h
7. Answer should include any of four of the following
 - a. The jacket should only be worn by members.
 - b. It should be kept clean and neat.
 - c. The jacket should have only a large emblem on the back and a small emblem on the front; the name of the State Association and the name of the local chapter on the back; and the name of the individual and one office or honor on the front.
 - d. The jacket should be worn on official occasions with the zipper fastened to the top. The collar should be turned down and the cuffs buttoned.

ANSWERS TO TEST

- e. The jacket should be worn by officers and members on *all* official FFA occasions, as well as other occasions where the chapter or State Association is represented. It *may* be worn to school and other appropriate places.
 - f. The jacket should only be worn to places that are appropriate for members to visit.
 - g. School letters and insignia of other organizations should not be attached to or worn on the jacket.
 - h. When the jacket becomes faded and worn, it should be discarded or the emblems or lettering removed.
 - i. The emblems and lettering should be removed if the jacket is given or sold to a nonmember.
 - j. A member always acts like a lady or gentleman when wearing the jacket.
 - k. Members should refrain from use of tobacco and alcohol while wearing the FFA jacket or officially representing the organization.
 - l. All chapter degree, officer, and award medals should be worn beneath the name on the right side of the jacket, with the exception that a single State Farmer charin and American Farmer key should be worn above the name or attached to a standard key chain. No more than three medals should be worn on the jacket; these should represent the highest degree earned, the highest office held and the highest award earned by the member.
8. Answers should include any six of the following
- a. Dress neatly and appropriately for the occasion.
 - b. Show respect for the rights of others and be courteous at all times.
 - c. Be honest and do not take unfair advantage of others.
 - d. Respect property of others.
 - e. Refrain from loud, boisterous talk, swearing, and horseplay.
 - f. Demonstrate sportsmanship in the show ring, judging contests, and meetings.
 - g. Attend meetings promptly and respect the opinions of others in discussion.
 - h. Take pride in the FFA organization, activities, farming programs, exhibits, and in the occupation of farming or ranching.
 - i. Share with others experiences and knowledge gained by attending national and state meetings.

ANSWERS TO TEST

9. Answer should include any four of the following
- a. Knowledge of the FFA on the part of every member.
 - b. Capable officers and leaders.
 - c. Responsibilities shared by all members in chapter activities.
 - d. Challenging program of activities.
 - e. Adequate financing for chapter activities.
 - f. Proper paraphernalia, equipment, and records.
 - g. Well-planned, regularly held chapter meetings.
 - h. Support by school officials and community leaders.
10. Answer should include any two of the following and may include others that the chapter approves
- a. Radio and television programs
 - b. FFA Week articles in newspapers
 - c. School assemblies
 - d. Civic club programs
 - e. Parent and member banquet
 - f. Poster displays in town
 - g. Church attendance as a group
 - h. Window displays
 - i. Food for America program
11. Answer should include any four of the following
- a. Uses an executive committee to assure careful planning in advance of the meeting time
 - b. Starts and finishes on time
 - c. Proceeds according to an established order of business

ANSWERS TO TEST

- d. Is conducted according to accepted parliamentary procedure
 - e. Includes well-prepared committees', secretary's and treasurer's reports
 - f. Is conducted by officers familiar with their duties and responsibilities
 - g. Commands the interest and attention of all members
 - h. Provides for maximum member participation and develops cooperative attitudes among members
 - i. Includes business, entertainment features, and refreshments
 - j. Prevents monotony and time wasting
 - k. Contains a minimum of active participation by the advisor
-
- 12. Evaluated to the satisfaction of the instructor
 - 13. Evaluated to the satisfaction of the instructor
 - 14. Evaluated to the satisfaction of the instructor
 - 15. Evaluated to the satisfaction of the instructor
 - 16. Evaluated to the satisfaction of the instructor

PARLIAMENTARY PROCEDURE
UNIT II

UNIT OBJECTIVE

After completing this unit, the student should be able to use parliamentary procedure and participate in an FFA meeting. The student will show this knowledge by completing the assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with parliamentary procedure.
2. Select from a list the purposes of parliamentary procedure.
3. State the function of the gavel.
4. Match gavel taps to member responses.
5. Match methods of voting to their correct definitions.
6. Match types of motions to their correct descriptions.
7. Match types of motions to their correct classifications.
8. Match parliamentary procedures to their correct uses during a meeting.
9. Arrange in order the steps in the progression of a motion.
10. State the purpose of a motion to amend.
11. List common ways to amend a motion.
12. Select from a list the duties of the FFA president.
13. State the characteristics of an FFA parliamentary procedure team member.
14. Use kinds of parliamentary procedure motions.
15. Use resources to answer questions about parliamentary procedure.
16. Use correct order to progress a motion.
17. Use parliamentary procedure to conduct or participate in an FFA meeting.

PARLIAMENTARY PROCEDURE
UNIT II

SUGGESTED ACTIVITIES

- I. Unit contents
 - A. Objective sheet
 - B. Suggested activities
 - C. Supplements
 - 1. Supplement #1 — Parliamentary Procedure Crossword Puzzle
 - 2. Supplement #2 — Summary of Motions
 - D. Transparency masters
 - 1. TM #1 — Kinds of Motions and Their Uses
 - 2. TM #2 — Kinds of Motions and Their Uses (Continued)
 - E. Information sheet
 - F. Assignment sheets
 - 1. Assignment Sheet #1 — Use Kinds of Parliamentary Procedure Motions
 - 2. Assignment Sheet #2 — Use Resources to Answer Questions About Parliamentary Procedure
 - 3. Assignment Sheet #3 — Use Correct Order to Progress a Motion
 - 4. Assignment Sheet #4 — Use Parliamentary Procedure to Conduct or Participate in an FFA Meeting
 - G. Answers to assignment sheets
 - H. Test
 - I. Answers to test

SUGGESTED ACTIVITIES

II. Instructor's guide

A. Obtain materials to supplement unit.

1. Film — *How to Conduct a Meeting*. Color. 18 minutes, Centron Educational Films, 1979. Available from Centron Educational Films, P.O. Box 687, 1621 West Ninth Street, Lawrence, Kansas 66044.

(NOTE: This film is available to Oklahoma teachers on a free-loan basis from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center Film Library, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074. Out-of-state teachers must order from the address listed above.)

2. Videotapes of past parliamentary procedure contests. Available from Dr. James Key, OSU Agricultural Education Department, Stillwater, Oklahoma 74078.

(NOTE: Users pay no fee for these tapes, but must furnish a one-half or three-quarters videotape cartridge.)

3. Books

- a. *Official FFA Manual*.

(NOTE: Purchase one copy for each person in the class. Available from the State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.

- b. *Student Handbook*.

(NOTE: Purchase a minimum of five copies. Available from the State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.

- c. *Leadership Training and Parliamentary Procedure for FFA*. Available from Prentice-Hall, Inc., Englewood Cliffs, New Jersey 07632.

(NOTE: Order a minimum of twelve copies.)

- d. *Parliamentary Procedure at a Glance*. Available from Hawthorn Books, Inc., E. P. Dutton, 2 Park Avenue, New York, New York 10016.

SUGGESTED ACTIVITIES

- B. Introduce unit by helping the student focus on the importance of learning to use parliamentary procedure.

SUGGESTIONS:

- Have FFA officers conduct a mock FFA meeting for freshman class.
- Show *How to Conduct a Meeting* so that students can see parliamentary procedure in use.

- C. Read chapter four in *Student Handbook* to help you prepare to teach this unit.

- D. Provide students with objective sheet.

- E. Discuss unit and specific objectives.

- F. Provide students with information and assignment sheets.

- G. Discuss information and assignment sheets.

1. Use Information Sheet, Section I to help students comprehend parliamentary procedure terms.

SUGGESTION:

- Make copies of Supplement #1 crossword puzzle, and use to reinforce terms in Section I.

2. Use Information Sheet, Section II to assist students in stating the purpose of parliamentary procedure.

SUGGESTIONS:

- Stress the importance of majority rule in meetings where parliamentary procedure is used, and emphasize at the same time, that opinions of the minority are heard, and that minority ideas and rights are respected as well.
- Explain to the students that some of the people (majority) elect the President of the United States, but following the election, the President serves all of the people.

SUGGESTED ACTIVITIES

3. Combine Information Sheet, Sections III and IV to help students develop respect for and respond correctly to uses of the gavel.

SUGGESTIONS:

- Demonstrate the correct procedure for using the gavel.
- Help students practice their responses to FFA meeting gavel taps.

4. Use Information Sheet, Section V to help students learn the different methods of voting.

SUGGESTIONS:

- Explain each method, and have students practice using the different methods.
- Explain when and where the different voting methods are used.

5. Use Information Sheet, Section VI and Transparencies #1 and #2 to help students learn the different classifications of motions.

SUGGESTIONS:

- Explain each classification in depth; provide examples of times when the different classifications of motions are used.
- Have students practice stating motions.

6. Combine Information Sheet, Sections VII and VIII and Assignment Sheets #1 and #2 to help students use different kinds of motions.

SUGGESTIONS:

- Discuss the different kinds of motions that can be used in conducting an FFA meeting.
- Provide examples to help students see how the motions are used.
- Use Transparencies #1 and #2 to assist students in using different kinds of motions.
- Make copies of Supplement #2, and distribute to students to use while completing Assignment Sheet #1.

SUGGESTED ACTIVITIES

7. Use Information Sheet, Section IX and Assignment Sheet #3 to teach students the progression of a motion.

SUGGESTIONS:

- Put the order of business on chalkboard, appoint a class member as president, and have the class practice the progression of a motion.
- Allow each class member to present a motion.

8. Use Information Sheet, Sections X and XI, and review Assignment Sheet #3 to help students learn to amend a motion.

SUGGESTION:

- Use the order of business suggested for Section IX, and allow each student the opportunity of amending a motion. Appoint a class member as president.

9. Use Information Sheet, Section XII to help students learn the duties of the FFA president.

SUGGESTIONS:

- Ask president of FFA chapter to talk to the class and to explain his or her responsibilities for carrying out the duties of the presiding officer.
- Show *How to Conduct a Meeting*, and ask students to evaluate the effectiveness of the presiding officer portrayed in the film.

10. Use Information Sheet, Section XIII and Assignment Sheet #4 to help students prepare to be members of the parliamentary procedure team.

SUGGESTIONS:

- Have the parliamentary procedure team conduct a meeting for the class. Make sure that the team uses at least five parliamentary procedure points.
- Have students evaluate the performance of the team, using the information in Section XIII.

- H. Give test.

SUGGESTED ACTIVITIES

III. Unit references

- A. Gray, Janell D. and J. R. Jackson. *Leadership Training and Parliamentary Procedure for FFA*. Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1958.
- B. Jones, Garfield O. *Parliamentary Procedures at a Glance*. New York: Hawthorn Books, Inc., 1971.
- C. *Official FFA Manual*. Alexandria, Virginia: Future Farmers of America, 1983.
- D. Sawatzky, Joyce. *Home Economics I*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1977.
- E. *Student Handbook*. Alexandria, Virginia: Future Farmers of America, 1977.

SUGGESTED ACTIVITIES

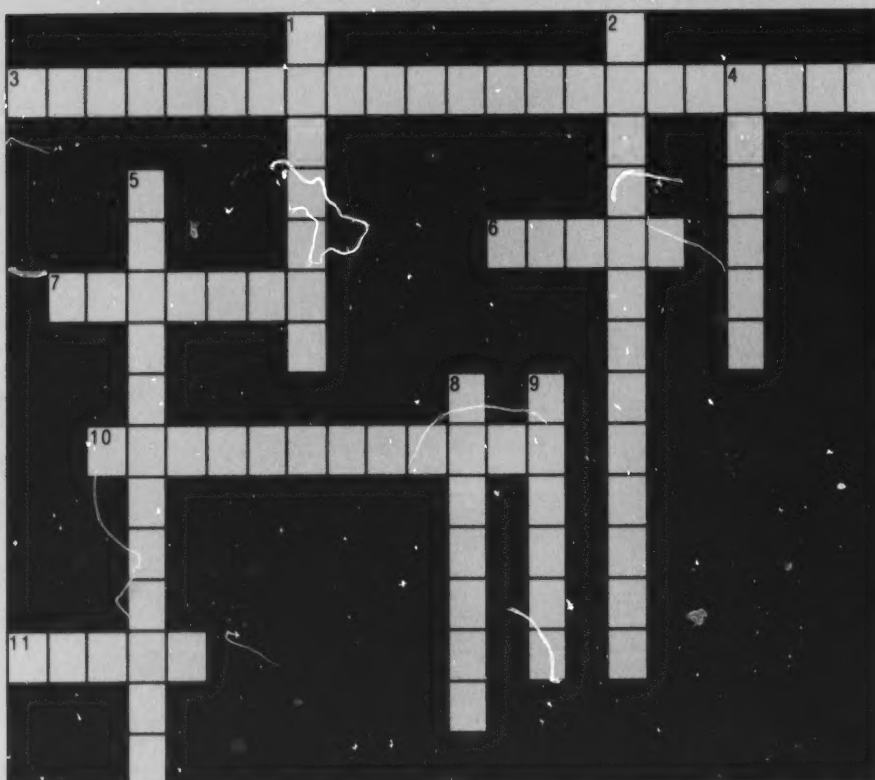
SUPPLEMENT #1 — PARLIAMENTARY PROCEDURE CROSSWORD PUZZLE

ACROSS

3. Set of rules for conducting a meeting in an organized and efficient manner (2 wds)
6. Presiding officer of a meeting
7. To close or terminate a meeting
10. Less than half of the legal votes cast, unless otherwise specified in the chapter rules (2 wds)
11. Any space exclusive of the "chair" in a meeting room

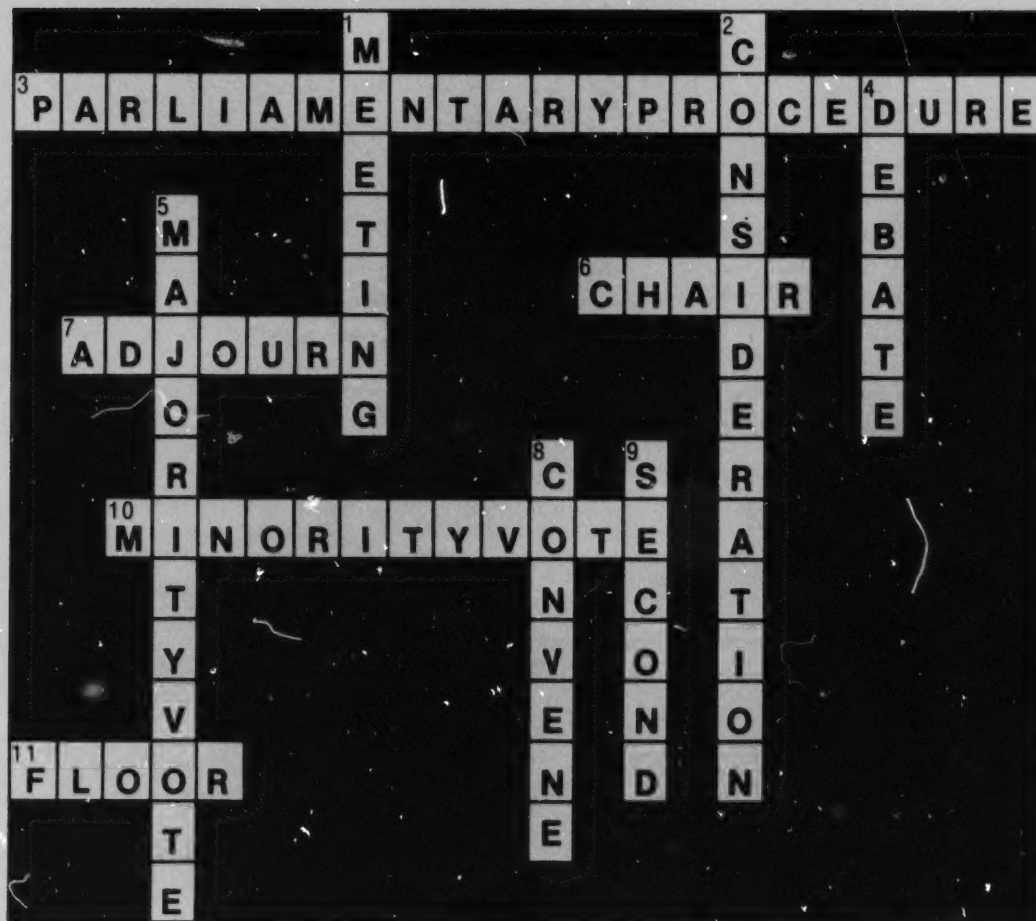
DOWN

1. Period of time during which the chapter convenes before adjournment
2. Formal discussion by members of an organization
4. Procedure to allow expression of positive and negative views on a question
5. More than half of the legal votes cast, unless otherwise specified in the chapter rules (2 wds)
8. To assemble together as a body
9. An indication by a member that he or she approves consideration of an item of business by the chapter



SUGGESTED ACTIVITIES

SUPPLEMENT #1



SUGGESTED ACTIVITIES

SUPPLEMENT #2 — SUMMARY OF MOTIONS

Classification	Kind	Second Required	Debatable	Amendable	Vote Required	Can Be Reconsidered
Privileged	Adjourn	Yes	No	No	Majority	No
	Question of Privilege	No	No	No	None	No
Incidental	Point of Order	No	No	No	None	No
	Appeal	Yes	Yes	No	Majority	Yes
	Suspend the Rules	Yes	No	No	$\frac{2}{3}$	No
	Division of the House	No	No	No	None	No
	Parliamentary Inquiry	No	No	No	None	No
	To Withdraw a Motion	No	No	No	Majority	Yes
Subsidiary	Lay on the Table	Yes	No	No	Majority	No
	Previous Question	Yes	No	No	$\frac{2}{3}$	Yes
	Postpone Definitely	Yes	Yes	No	Majority	Yes
	Limit Debate	Yes	No	No	$\frac{2}{3}$	Yes
	Refer to Committee	Yes	Yes	Yes	Majority	Yes
	Amend	Yes	Yes	Yes	Majority	Yes
	Postpone Indefinitely	Yes	Yes	No	Majority	Yes
Main	Main Motion	Yes	Yes	Yes	Majority	Yes
Other	Take from the Table	Yes	No	No	Majority	No
	Reconsider	Yes	Yes	No	Majority	No
	Rescind	Yes	Yes	Yes	$\frac{2}{3}$	No

Used with permission of the Future Farmers of America, National FFA Center, Alexandria, Virginia.

Kinds of Motions and Their Uses

Classification	Kind	Second Required	Debatable	Amendable	Vote Required	Can Be Reconsidered
Privileged	Adjourn	Yes	No	No	Majority	No
	Question of Privilege	No	No	No	None	No
Incidental	Point of Order	No	No	No	None	No
	Appeal	Yes	Yes	No	Majority	Yes
	Suspend the Rules	Yes	No	No	$\frac{2}{3}$	No
	Division of the House	No	No	No	None	No
	Parliamentary Inquiry	No	No	No	None	No
	To Withdraw a Motion	No	No	No	Majority	Yes

Used with permission of the Future Farmers of America, National FFA Center, Alexandria, Virginia.

Kinds of Motions and Their Uses

(Continued)

Classification	Kind	Second Required	Debatable	Amendable	Vote Required	Can Be Reconsidered
Subsidiary	Lay on the Table	Yes	No	No	Majority	No
	Previous Question	Yes	No	No	2/3	Yes
	Postpone Defi- nitely	Yes	Yes	No	Majority	Yes
	Limit Debate	Yes	No	No	2/3	Yes
	Refer to Commit- tee	Yes	Yes	Yes	Majority	Yes
	Amend	Yes	Yes	Yes	Majority	Yes
	Postpone Indefi- nitely	Yes	Yes	No	Majority	Yes
Main	Main Motion	Yes	Yes	Yes	Majority	Yes
Other	Take from the Table	Yes	No	No	Majority	No
	Reconsider	Yes	Yes	No	Majority	No
	Rescind	Yes	Yes	Yes	2/3	No

Used with permission of the Future Farmers of America, National FFA Center, Alexandria, Virginia.

PARLIAMENTARY PROCEDURE
UNIT II

INFORMATION SHEET

I. Terms and definitions

- A. Parliamentary procedure — Set of rules for conducting a meeting in an organized and efficient manner

(NOTE: The knowledge of such techniques is essential to competent leadership development and vital to success of any organization.)

- B. Meeting — Period of time during which chapter convenes before adjournment

- C. Majority vote — More than one-half of the legal votes cast, unless otherwise specified in the chapter rules

(NOTE: A majority vote is sometimes referred to as a *50-percent-plus-one vote*.)

- D. Minority vote — Less than one-half of the legal votes cast, unless otherwise specified in the chapter rules

- E. Debate — Procedure to allow expression of positive and negative views on a question

- F. Adjourn — To close or terminate a meeting

- G. Convene — To assemble together as a body

- H. Consideration — Formal discussion by members of an organization

- I. Floor — Any space exclusive of the "chair" in a meeting room

(NOTE: A person has the floor after being recognized by the president or presiding officer.)

- J. Chair — Presiding officer of a meeting

- K. Second — Indication by a member that he or she approves consideration of an item of business by the chapter

(NOTE: The member who makes the motion cannot second it.)

II. Purposes of parliamentary procedure

- A. Handling one item at a time

- B. Allowing full and free debate

INFORMATION SHEET

- C. Allowing equal rights to all members
- D. Allowing majority to rule while respecting rights of minority
- III. Function of the gavel — To exercise authority in support of self-government and orderly procedure
- IV. Gavel taps and member responses
 - A. Two taps — Members come to order so that meeting may start
 - B. Three taps — All members stand
 - C. One tap
 - 1. All members take their seats
 - 2. Members are made aware that motion has passed or failed
 - 3. Members are signaled that meeting is adjourned
 - D. Short tap or series of short taps — Members stop talking
- V. Methods of voting
 - A. Voice vote — Members vote by saying "aye" or "no"
 - B. Rising vote — Members vote by standing, or by a show of hands
 - C. Secret ballot — Members cast a written vote
- VI. Types of motions
 - A. Main motion — Presents an item of business to chapter for its consideration and action

(NOTE: A main motion is introduced by a member saying, "I move that . . ." or "I move to . . ." Only one main motion can be considered at a time.)
 - B. Subsidiary motion — Modifies or disposes of main motion; must be voted on before vote is taken on main motion

EXAMPLE: Amendment
 - C. Privileged motion — Has no connection with main motion; outranks other motions

EXAMPLES: Fix time of next meeting, adjourn, call for question of privilege, or call for order of the day

INFORMATION SHEET

- D. Incidental motion — Arises from or relates to procedure; may or may not refer directly to main question

EXAMPLES: Rise to point of order, appeal, suspend the rules, withdraw or renew a motion

VII. Classification of types of motions

A. Privileged

1. Adjourn
2. Question of privilege

B. Incidental

1. Point of order
2. Appeal
3. Suspend the rules
4. Division of the house
5. Parliamentary inquiry
6. Withdraw a motion

C. Subsidiary

1. Lay on the table
2. Previous question
3. Postpone definitely
4. Limit debate
5. Refer to committee
6. Amend
7. Postpone indefinitely

D. Main — Main motion or main question

E. Other

1. Take from the table
2. Reconsider
3. Rescind

INFORMATION SHEET

VIII. Uses of parliamentary procedure during a meeting (Table 1)

TABLE 1

Parliamentary Procedure	Use During Meeting
Main motion	Present business for action
Postpone indefinitely	Defer a matter to later meetings
Lay on table	Defer action
Amend	Change or modify
Commit or refer to a committee	Let a few attend to a matter
Previous question	Stop debate and order an immediate vote
Suspend the rules or change the bylaws	Do something contrary to the bylaws or rules
Withdraw a motion	Prevent a motion from being voted upon
Objection to consideration	Determine whether a question is in accord with bylaws or is relevant
Question of privilege	Attend to well-being and comfort of the chapter or members
Adjourn	Dismiss members from meeting
Fix time of next meeting	Set a time for next meeting
Reconsider the vote	Provide an opportunity to vote a second time on a measure (NOTE: The members must have voted on the previous question.)
Parliamentary inquiry	Ask question related to parliamentary procedure
Point of order	Call attention to procedural error
Appeal decision of chair	Allow member to question the decision of the chair
Take from the table	Return an item of business to the assembly for consideration
Limit debate	Establish length of time for discussion
Postpone definitely	Defer a matter to a specified time
Rescind	Cancel action taken by the chapter
Division of the house	Question the chair's decision on a voice vote

INFORMATION SHEET

IX. Steps in the progression of a motion

- A. Member rises and addresses the presiding officer

EXAMPLE: "Mr./Madame President . . ."

- B. Member is recognized

- C. Member proposes the motion

EXAMPLE: "I move that . . ."

- D. Another member seconds the motion without rising or addressing the chair

EXAMPLE: "I second the motion."

- E. Presiding officer states the motion

- F. Assembly discusses or debates the motion

EXAMPLE: *Presiding officer:* Is there any further discussion: . . . Since there is no further discussion, all in favor say "aye." . . . All opposed say "no."

- G. Member or president calls for the vote

- H. Presiding officer takes the vote

- I. Result of the vote is announced

EXAMPLE: "The motion passes," or "The motion fails."

X. Purpose of a motion to amend — To change the motion to a more satisfactory or acceptable form

XI. Common ways to amend a motion

- A. By addition

EXAMPLE: "I move to amend the motion by adding the words *breeding livestock*."

- B. By striking out

EXAMPLE: "I move to amend the motion by striking out the words *by January 5*."

- C. By substitution

EXAMPLE: "I move to amend the motion by substituting the word *swine* for the word *pigs*."

INFORMATION SHEET

XII. Duties of the FFA president

- A. Deciding the order of speakers
- B. Remaining impartial
- C. Restraining speakers within the limits of the rules
- D. Enforcing good decorum
- E. Appointing committees
- F. Deciding points of order
- G. Voting in cases where the chair's vote will make or break a tie
- H. Avoiding influencing a vote by commenting on a motion

XIII. Characteristics of an FFA parliamentary procedure team member

- A. Desires to work
- B. Is able to use parliamentary procedure
- C. Has strong, clear voice
- D. Is calm
- E. Possesses self-confidence
- F. Is humble
- G. Is dependable

**PARLIAMENTARY PROCEDURE
UNIT II**

**ASSIGNMENT SHEET #1 — USE KINDS OF
PARLIAMENTARY PROCEDURE MOTIONS**

NAME _____

SCORE _____

As an FFA member, you will be a part of the decision-making body of the FFA chapter. The FFA meeting is the place where chapter business is conducted and decisions are made. FFA meetings go smoothly when correct parliamentary procedures are used.

The purpose of this assignment sheet is to provide you the opportunity to practice using the different kinds of motions. The table that follows gives the classifications and kinds of motions. You are responsible for stating (1) whether a second is required, (2) whether the motion is debatable, (3) whether the motion is amendable, (4) whether the motion requires a two-thirds or simple majority vote or none, and (5) whether the motion can be reconsidered. Write "yes," "no," or the vote required in the appropriate blanks.

Classification	Kind	Second Required	Debatable	Amendable	Vote Required	Can Be Reconsidered
Privileged	Adjourn					
	Question of Privilege					
Incidental	Point of Order					
	Appeal					
	Suspend the Rules					
	Division of the House					
	Parliamentary Inquiry					
	To Withdraw a Motion					
Subsidiary	Lay on the Table					
	Previous Question					
	Postpone Definitely					
	Limit Debate					
	Refer to Committee					
	Amend					
	Postpone Indefinitely					
Main	Main Motion					
Other	Take from the Table					
	Reconsider					
	Rescind					

Adapted with permission of the Future Farmers of America, National FFA Center, Alexandria, Virginia.

PARLIAMENTARY PROCEDURE
UNIT II

ASSIGNMENT SHEET #2 — USE RESOURCES TO
ANSWER QUESTIONS ABOUT PARLIAMENTARY PROCEDURE

NAME _____ SCORE _____

It takes a great deal of study and practice to learn the correct use of parliamentary procedure.

Use your *Official FFA Manual*, the Information Sheet, and *Leadership Training and Parliamentary Procedure for FFA* to answer the following questions and complete the following statements.

A. Name two motions that require a two-thirds majority vote for approval.

1. _____
2. _____

B. What is the purpose of a motion? _____

C. What is the purpose of an amendment? _____

D. Name five motions that do not require a second.

1. _____
2. _____
3. _____
4. _____
5. _____

E. Name four motions that are not amendable.

1. _____
2. _____
3. _____
4. _____

ASSIGNMENT SHEET #2

F. Name three ways a motion may be amended.

1. _____
2. _____
3. _____

	Yes	No
G. Is the motion to take from the table debatable?	☐	☐
H. Does the motion to adjourn have to be seconded?	☐	☐
I. Does an amendment require a second before it can be discussed?	☐	☐
J. Is the motion to lay on the table debatable?	☐	☐
K. Does the motion to suspend the rules require a two-thirds majority?	☐	☐
L. Is it necessary to rise when seconding a motion?	☐	☐
M. Should the presiding officer stand when addressing the chapter?	☐	☐
N. Is the motion to table a motion a subsidiary motion?	☐	☐
O. Is the motion to amend always amendable?	☐	☐
P. Does the motion to amend always require a second?	☐	☐
Q. Is the motion to amend always debatable?	☐	☐
R. May the motion to amend be reconsidered?	☐	☐
S. Does the motion to lay on the table require a second?	☐	☐
T. Is the motion to lay on the table amendable?	☐	☐
U. Does the motion to lay on the table require a simple majority vote?	☐	☐
V. Is the motion to adjourn, if a privileged motion, debatable?	☐	☐
W. Should the presiding officer always be addressed as Mr. or Madam President?	☐	☐
X. May members discuss a motion before it is seconded?	☐	☐
Y. Is a good presiding officer tactful, helpful, and fair?	☐	☐

ASSIGNMENT SHEET #2

	Yes	No
Z. Does one rap of the gavel call the chapter to order?	☐	☐
AA. May a motion to refer to a committee be debated?	☐	☐
BB. Is a majority vote required in order to confirm a point of order?	☐	☐
CC. Does a tie vote on an appeal reverse the decision of the chair?	☐	☐
DD. Is a majority vote required to close nominations?	☐	☐

PARLIAMENTARY PROCEDURE
UNIT II

ASSIGNMENT SHEET #3 — USE CORRECT ORDER TO PROGRESS A MOTION

NAME _____ SCORE _____

FFA members are responsible for using correct procedures to progress a motion that is before the membership. Although it is a simple process, it requires some practice.

Write the correct order to progress a motion for the situations below.

- A. You are in an FFA meeting. The order of the day is "Should the local FFA chapter hold a local FFA livestock show?" Write the steps necessary to move the main motion, which is "The FFA chapter should hold a local livestock show on Friday, March 15, at 6:30 p.m."

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

- B. Write the correct steps to amend the main motion by changing the time from 6:30 p.m. to 7:30 p.m.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

PARLIAMENTARY PROCEDURE
UNIT IIASSIGNMENT SHEET #4 — USE PARLIAMENTARY PROCEDURE TO CONDUCT OR
PARTICIPATE IN AN FFA MEETING

NAME _____ SCORE _____

The FFA meeting is the official place where chapter business is conducted. Your duties as an FFA member are to attend meetings, to take an active part in chapter work, and to work to make the chapter stronger. Although as a first-year FFA member you may not have a leadership role, you can be heard if you learn to use parliamentary procedure.

Attend an FFA meeting, watch upper class members use parliamentary procedure, and then answer the following questions.

A. Were proper parliamentary procedures used in the meeting? Yes _____ No _____

Explain your answer. _____

B. What did you gain from the meeting? _____

C. How many main motions were used? _____

Name the motions that were used.

ASSIGNMENT SHEET #4

D. Were there any amendments made? Yes _____ No _____

1. If yes, how many? _____

2. Name the amendments.

3. Were amendments made correctly? Yes _____ No _____

4. Why or why not? _____

E. Were any of the following parliamentary procedure points used in the meeting? Check those parliamentary procedures used, and write the number of times they were used.

Points Used	Kinds of Motion	Number of Times Used
	Adjourn	
	Question of privilege	
	Point of order	
	Appeal	
	Suspend the rules	
	Division of the house	
	Parliamentary inquiry	
	To withdraw a motion	
	Lay on table	
	Previous question	

ASSIGNMENT SHEET #4

Points Used	Kinds of Motion	Number of Times Used
	Postpone definitely	
	Limit debate	
	Refer to committee	
	Amend	
	Postpone indefinitely	
	Main motion	
	Take from table	
	Reconsider	
	Rescind	

PARLIAMENTARY PROCEDURE UNIT II

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

Classification	Kind	Second Required	Debatable	Amendable	Vote Required	Can Be Reconsidered
Privileged	Adjourn	Yes	No	No	Majority	No
	Question of Privilege	No	No	No	None	No
	Point of Order	No	No	No	None	No
	Appeal	Yes	Yes	No	Majority	Yes
	Suspend the Rules	Yes	No	No	2/3	No
	Division of the House	No	No	No	None	No
	Parliamentary Inquiry	No	No	No	None	No
	To Withdraw a Motion	No	No	No	Majority	Yes
Subsidiary	Lay on the Table	Yes	No	No	Majority	No
	Previous Question	Yes	No	No	2/3	Yes
	Postpone Definitely	Yes	Yes	No	Majority	Yes
	Limit Debate	Yes	No	No	2/3	Yes
	Refer to Committee	Yes	Yes	Yes	Majority	Yes
	Amend	Yes	Yes	Yes	Majority	Yes
	Postpone Indefinitely	Yes	Yes	No	Majority	Yes
Main	Main Motion	Yes	Yes	Yes	Majority	Yes
Other	Take from the Table	Yes	No	No	Majority	No
	Reconsider	Yes	Yes	No	Majority	No
	Rescind	Yes	Yes	Yes	2/3	No

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #2

- A. Any of the following are correct
1. Rescind
 2. Limit debate
 3. Suspend the rules
 4. Previous question
- B. To place information before the body of house
- C. To modify, change, or clarify a motion
- D.
1. Question of privilege
 2. Point of order
 3. Division of the house
 4. Parliamentary inquiry
 5. To withdraw a motion
- E. Answer should include any four of the following
1. Adjourn
 2. Question of privilege
 3. Point of order
 4. Appeal
 5. Suspend the rules
 6. Division of the house
 7. Parliamentary inquiry
 8. To withdraw a motion
 9. Lay on the table
 10. Previous question
 11. Postpone definitely
 12. Limit debate

ANSWERS TO ASSIGNMENT SHEETS

- 13. Postpone indefinitely
- 14. Take from the table
- 15. Reconsider
- F.
 - 1. Addition
 - 2. Substitution
 - 3. Striking out
- G. No
- H. Yes
- I. Yes
- J. No
- K. Yes
- L. No
- M. Yes
- N. Yes
- O. Yes
- P. Yes
- Q. Yes
- R. Yes
- S. Yes
- T. No
- U. Yes
- V. No
- W. Yes
- X. No
- Y. Yes

ANSWERS TO ASSIGNMENT SHEETS

Z. No

AA. Yes

BB. No

CC. No

DD. Yes

Assignment Sheet #3

- A.
 1. Member rises and addresses the presiding officer
 2. Member is recognized
 3. Member says, "I move that our chapter hold a local livestock show on Friday, March 15, at 6:30 P.M.
 4. Another member seconds the motion
 5. Presiding officer states motion
 6. Motion is debated
 7. A member calls for question
 8. Membership votes
- B.
 1. Member rises and addresses the presiding officer
 2. Member is recognized
 3. Member says, "I move to amend the main motion by substituting 7:30 P.M. for 6:30 P.M."
 4. Another member seconds the motion
 5. Presiding officer states motion
 6. Motion is debated
 7. A member calls for question
 8. Membership votes

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #4

(NOTE: Use the following criteria as an aid in evaluating the completed assignment sheet.)

- A. Did the student attend FFA meeting?
- B. Did the student recognize different parliamentary procedure points used in FFA meeting?

PARLIAMENTARY PROCEDURE UNIT II

TEST

NAME _____

SCORE _____

1. Match to their correct definitions terms associated with parliamentary procedure. Write the correct numbers in the blanks.

- | | | |
|---------|--|----------------------------|
| _____a. | To close or terminate a meeting | 1. Second |
| _____b. | Period of time during which chapter convenes before adjournment | 2. Parliamentary procedure |
| _____c. | Less than one-half of the legal votes cast, unless otherwise specified in the chapter rules | 3. Consideration |
| _____d. | Any space, exclusive of the "chair" in a meeting room | 4. Meeting |
| _____e. | Indication by a member that he or she approves consideration of an item of business by the chapter | 5. Chair |
| _____f. | Set of rules for conducting a meeting in an organized and efficient manner | 6. Floor |
| _____g. | More than one-half of the legal votes cast, unless otherwise specified in the chapter rules | 7. Debate |
| _____h. | Procedure to allow expression of positive and negative views on a question | 8. Minority vote |
| _____i. | To assemble together as a body | 9. Convene |
| _____j. | Formal discussion by members of an organization | 10. Majority vote |
| _____k. | Presiding officer of a meeting | 11. Adjourn |

TEST

2. Select from the following list purposes of parliamentary procedure. Write an "X" in the blank before each correct answer.

- ____ a. Allowing majority to rule while respecting rights of minority
- ____ b. Limiting debate to five minutes
- ____ c. Letting president control intent of meeting
- ____ d. Allowing equal rights to all members
- ____ e. Controlling what the chapter does
- ____ f. Allowing full and free debate
- ____ g. Handling up to four items at a time

3. State the function of the gavel.

4. Match gavel taps to member responses. Write the correct numbers in the blanks.

- | | |
|---|--------------------------------------|
| ____ a. Members come to order so that meeting may start | 1. One tap |
| ____ b. All members stand | 2. Two taps |
| ____ c. Members are signaled that meeting is adjourned | 3. Three taps |
| ____ d. All members take their seats | 4. Short tap or series of short taps |
| ____ e. Members are made aware that motion has passed or failed | |
| ____ f. Members stop talking | |

5. Match methods of voting to their correct definitions. Write the correct numbers in the blanks.

- | | |
|---|------------------|
| ____ a. Members vote by standing, or by a show of hands | 1. Voice vote |
| ____ b. Members vote by saying "aye" or "no" | 2. Secret ballot |
| ____ c. Members cast a written vote | 3. Rising vote |

TEST

6. Match types of motions to their correct descriptions. Write the correct numbers in the blanks.

- | | | |
|---------|---|----------------------|
| _____a. | Has no connection with main motion; outranks other motions | 1. Main motion |
| _____b. | Modifies or disposes of main motion; must be voted on before vote is taken on main motion | 2. Subsidiary motion |
| _____c. | Presents an item of business to chapter for its consideration and action | 3. Privileged motion |
| _____d. | Arises from or relates to procedure; may or may not refer directly to main question | 4. Incidental motion |

7. Match types of motions to their correct classifications. Write the correct numbers in the blanks. Answers may be used more than once.

- | | | |
|---------|------------------------------|---------------|
| _____a. | To withdraw a motion | 1. Subsidiary |
| _____b. | Main motion or main question | 2. Main |
| _____c. | Point of order | 3. Privileged |
| _____d. | Amend | 4. Incidental |
| _____e. | Refer to committee | 5. Other |
| _____f. | Parliamentary inquiry | |
| _____g. | Adjourn | |
| _____h. | Lay on the table | |
| _____i. | Division of the house | |
| _____j. | Postpone definitely | |
| _____k. | Suspend the rules | |
| _____l. | Previous question | |
| _____m. | Limit debate | |
| _____n. | Appeal | |
| _____o. | Take from the table | |
| _____p. | Postpone indefinitely | |
| _____q. | Reconsider | |
| _____r. | Rescind | |
| _____s. | Question of privilege | |

TEST

8. Match parliamentary procedures to their correct uses during a meeting. Write correct numbers in the blanks.

_____a.	Question the chair's decision on a voice vote	1. Adjourn
_____b.	Present business for action	2. Main motion
_____c.	Cancel action taken by the chapter	3. Postpone indefinitely
_____d.	Defer a matter to later meetings	4. Division of the house
_____e.	Defer a matter to a specified time	5. Rescind
_____f.	Defer action	6. Lay on table
_____g.	Establish length of time for discussion	7. Limit debate
_____h.	Change or modify	8. Amend
_____i.	Return an item of business to the assembly for consideration	9. Commit or refer to a committee
_____j.	Let a few attend to a matter	10. Take from the table
_____k.	Allow member to question the decision of the chair	11. Previous question
_____l.	Stop debate and order an immediate vote	12. Appeal decision of chair
_____m.	Call attention to procedural error	13. Suspend the rules or change the bylaws
_____n.	Do something contrary to the bylaws or rules	14. Withdraw a motion
_____o.	Ask question related to parliamentary procedure	15. Objection to consideration
_____p.	Prevent a motion from being voted upon	16. Question of privilege
_____q.	Provide an opportunity to vote a second time on a measure	17. Fix time of next meeting
_____r.	Determine whether a question is in accord with bylaws or is relevant	18. Reconsider the vote
_____s.	Set a time for next meeting	19. Parliamentary inquiry
_____t.	Attend to well-being and comfort of the chapter or members	20. Point of order
_____u.	Dismiss members from meeting	21. Postpone definitely

TEST

9. Arrange in order the following steps in the progression of a motion. Write a "1" before the first step, a "2" before the second step, and so on.
- ____a. Assembly discusses or debates the motion
 - ____b. Member proposes the motion
 - ____c. Member rises and addresses the presiding officer
 - ____d. Result of the vote is announced
 - ____e. Presiding officer states the motion
 - ____f. Member is recognized
 - ____g. Presiding officer takes the vote
 - ____h. Another member seconds the motion without rising or addressing the chair
 - ____i. Member or president calls for vote
10. State the purpose of a motion to amend.
- _____
- _____
11. List common ways to amend a motion.
- a. _____
 - b. _____
 - c. _____
12. Select from the following list the duties of the FFA president. Write an "X" in the blank before each correct answer.
- ____a. Appointing committees
 - ____b. Deciding the order of speakers
 - ____c. Voting on all motions introduced
 - ____d. Enforcing good decorum
 - ____e. Influencing a vote by giving own opinion

TEST

- ____f. Seconding motions
- ____g. Deciding points of order
- ____h. Restraining speakers within the limits of the rules
- ____i. Favoring friends and senior members

13. State four characteristics of an FFA parliamentary procedure team member.

- a. _____
- b. _____
- c. _____
- d. _____

(NOTE: Test questions 14-17 list the assignment sheets. They are an important part of the test. If they have not been completed, check with your instructor.)

- 14. Use kinds of parliamentary procedure motions.
- 15. Use resources to answer questions about parliamentary procedures.
- 16. Use correct order to progress a motion.
- 17. Use parliamentary procedure to conduct or participate in an FFA meeting.

PARLIAMENTARY PROCEDURE
UNIT II

ANSWERS TO TEST

1. a. 11 d. 6 g. 10 j. 3
b. 4 e. 1 h. 7 k. 5
c. 8 f. 2 i. 9
2. a, d, f
3. To exercise authority in support of self-government and orderly procedure
4. a. 2 d. 1
b. 3 e. 1
c. 1 f. 4
5. a. 3
b. 1
c. 2
6. a. 3
b. 2
c. 1
d. 4
7. a. 4 f. 4 k. 4 p. 1
b. 2 g. 3 l. 1 q. 5
c. 4 h. 1 m. 1 r. 5
d. 1 i. 4 n. 4 s. 3
e. 1 j. 1 o. 5

ANSWERS TO TEST

8.	a.	4	g.	7	m.	20	s.	17
	b.	2	h.	8	n.	13	t.	16
	c.	5	i.	10	o.	19	u.	1
	d.	3	j.	9	p.	14		
	e.	21	k.	12	q.	18		
	f.	6	l.	11	r.	15		

9.	a.	6	f.	2
	b.	3	g.	8
	c.	1	h.	4
	d.	9	i.	7
	e.	5		

10. To change the motion to a more satisfactory or acceptable form

11. a. By addition
b. By striking out
c. By substitution

12. a, b, d, g, h

13. Answer should include any four of the following

- a. Desires to work
b. Is able to use parliamentary procedure
c. Has strong, clear voice
d. Is calm
e. Possesses self-confidence

ANSWERS TO TEST

- f. Is humble
- g. Is dependable
- 14. Evaluated to satisfaction of instructor
- 15. Evaluated to satisfaction of instructor
- 16. Evaluated to satisfaction of instructor
- 17. Evaluated to satisfaction of instructor

MAKING A GROUP PRESENTATION UNIT III

UNIT OBJECTIVE

After completing this unit, the student should be able to make a group presentation. The student will show this knowledge by completing assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with making a group presentation.
2. Match types of group presentations to their correct definitions.
3. Select from a list general purposes of a group presentation.
4. Select from a list guidelines for preparing successful group presentations.
5. Arrange in order steps to follow in developing a group presentation.
6. Select from a list guidelines to follow when gathering information.
7. State rules for using quotations and statistics in a presentation.
8. State reasons for using outlines.
9. Match principal parts of an outline to their correct definitions.
10. Select from a list ways to make a good first impression.
11. Select from a list ways to develop and add meaning to the delivery of a group presentation.
12. State reasons for using gestures in a group presentation.
13. State ways to develop proper delivery.
14. Give a prepared one-minute talk.
15. Introduce a speaker.
16. Give an oral report.
17. Participate in a panel discussion.
18. Write an outline for a three-minute speech.

MAKING A GROUP PRESENTATION
UNIT III

SUGGESTED ACTIVITIES

- I. Unit contents
 - A. Objective sheet
 - B. Suggested activities
 - C. Transparency masters
 - 1. TM #1 — What is an Outline?
 - 2. TM #2 — Principal Parts of an Outline
 - 3. TM #3 — What Should an Outline Look Like?
 - D. Information sheet
 - E. Assignment sheets
 - 1. Assignment Sheet #1 — Give a Prepared One-Minute Talk
 - 2. Assignment Sheet #2 — Introduce a Speaker
 - 3. Assignment Sheet #3 — Give an Oral Report
 - 4. Assignment Sheet #4 — Participate in a Panel Discussion
 - 5. Assignment Sheet #5 — Write an Outline for a Three-Minute Speech
 - F. Answers to assignment sheets
 - G. Test
 - H. Answers to test
- II. Instructor's guide
 - A. Order materials and equipment needed to supplement unit.
 - 1. Films
 - a. *J. J. Gets Ready*. Color, 10 minutes, Journal Films, 1977. Available from Journal Films, Inc., 930 Pitner Avenue, Evanston, Illinois 60202; (800) 323-5448 or (312) 325-6700.

SUGGESTED ACTIVITIES

- b. *J. J. Gets to His Feet*. Color, 10 minutes, Journal Films, 1977. Available from Journal Films, Inc., 930 Pitner Avenue, Evanston, Illinois 60202; (800) 323-5448 or (312) 325-6700.

(NOTE: These films are available on a free-loan basis to Oklahoma teachers from the Oklahoma State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074. Out-of-state teachers must order from the address listed.)

2. Books

- a. *How to Develop Self-Confidence and Influence People by Public Speaking*. Available from Pocket Books, Inc., Division of Simon and Schuster, Inc., 630 Fifth Avenue, New York, New York 10020.
- b. *See You at the Top*. Available from Pelican Publishing House, 630 Burmaster Street, Gretna, Louisiana 70053.

- 3. Audiovisuals — Cassette or videotape of *Prepared Public Speaking*. Available from National FFA Supply Service, National FFA Center, 5632 Mount Vernon Memorial Highway, P.O. Box 15160, Alexandria, Virginia 22309.

(NOTE: This audiovisual contains the speeches [including questions and answers] of the finalists in the National FFA Prepared Public Speaking Contest.)

4. Equipment

- a. Flip charts, poster paper, tape, 3 x 5 index cards, and magic markers for students to use while developing their group presentations.
- b. Clock for teacher to use while timing group presentations.
- c. Video camera and recorder, microphone system, and tape recorder if desired.

B. Obtain or make transparencies.

(NOTE: Transparencies are available for purchase from the Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)

SUGGESTED ACTIVITIES

- C. Introduce unit by helping students focus on the importance of giving presentations.

SUGGESTIONS:

- Ask students to imagine how successful leaders must have felt the first time they made a presentation to a group. For instance, was Jimmy Carter nervous when he made presentations to the Plains FFA chapter before he became their secretary? Did Gerald Ford talk too fast or have shaky legs when he made presentations as an active participant in Boy Scouts?
- Ask students to identify someone in the school system who they think is a good presenter in group situations. Ask students to identify individuals within the community who are good presenters.

- D. Provide students with objective sheet.
- E. Discuss unit and specific objectives.
- F. Discuss information and assignment sheets.

(NOTE: This unit contains five assignment sheets. Each assignment sheet builds upon the previous assignment sheet and is designed to ease students into making group presentations. Use audiotape recordings to help students develop appropriate voice patterns. Use videotape recordings to help students identify appropriate and inappropriate gestures used while completing assignment sheets.)

1. Make the terms in Section I of the Information Sheet meaningful by illustrating or demonstrating the meaning of each as it is introduced.

SUGGESTIONS:

- Collect pictures from magazines to show different gestures. Hang examples of gestures in classroom, and ask students what ideas are being communicated.
- Show students example(s) of résumé(s). You can use the résumé in Assignment Sheet #2 if others are not readily available.

SUGGESTED ACTIVITIES

2. Use Information Sheet, Sections II and III to make students aware of different types of presentations and their purposes. Stress the importance of selecting the right kind of presentation for the purpose required. Have students complete Assignment Sheets #1 and #2.

SUGGESTIONS:

- Show film *J. J. Gets to His Feet*.
 - After students review Sections II and III, have them develop a list of situations in which each type of presentation would be most effective.
 - Ask students to state their intended purpose as they complete Assignment Sheets #1 and #2. Was the purpose to entertain, inform, or influence? Was the purpose for Assignment Sheet #1 different from that for Assignment Sheet #2?
3. Use Information Sheet, Section IV to emphasize that nervousness while making group presentations is natural but can be partially overcome with careful selection of the topic and with thought about the audience. Have students complete Assignment Sheet #3.

SUGGESTIONS:

- Provide appropriate reference material from which students can select information. Help students select an article that interests them, one that you feel they can use as the basis of an oral report. Show them how to identify the important parts of the article.
 - Invite a junior or senior to make a group presentation to the class. Encourage the students to ask the presenter questions about how he or she selected, researched, and developed the idea for the presentation.
4. Discuss the importance, as well as the skills, associated with collecting information needed for making group presentations; use Information Sheet, Sections V and VI and Assignment Sheets #4 and #5.

SUGGESTIONS:

- Show film *J. J. Gets Ready*.
- Make sure that there is a variety of trade magazines and journals available and that students know the locations of these resources in the classroom or office.

SUGGESTED ACTIVITIES

- Arrange a field trip to the school or public library, and ask the librarian to show students how to use the *Reader's Guide to Periodical Literature*.
 - Show students how to complete tasks associated with researching a subject. For example, show students how to use a table of contents in a magazine to locate articles, and how to scan an article to determine its usefulness as a reference.
5. Emphasize that the use of statistics and quotations is more effective when statistics and quotations are presented in the proper manner, kept short, and identified. Use Section VII of Information Sheet.

SUGGESTIONS:

- Write examples of improperly used quotations and statistics on the chalkboard. Discuss the difference between properly presented statistics and improperly presented statistics.

EXAMPLES: The Oklahoma Employment Commission reports that the employment for September is 8.2 percent, up 5 percent from two years ago. (Year of report not given)

The April future market for live hogs is \$48. (Year and source not given)

John Block, Secretary of Agriculture, during a speech given to the National Pork Producers Association, said, American Pork Producers should cut back production by 3 to 5 percent in order to save the market price. (Date of speech not given; quoted material not enclosed in quotation marks)

- Make a copy of an article that is appropriate for all students to read. Help students identify statistics in and extract quotations from the article.
6. Use Transparencies #1 through #3 to illustrate Information Sheet, Sections VIII and IX. Discuss the use of outlines in making group presentations. Have students complete Assignment Sheet #6.

SUGGESTION:

- Prepare and then discuss with the class an outline for an article that you have asked the students to read.

SUGGESTED ACTIVITIES

7. Help students overcome their fear of making group presentations; emphasize that preparation and practice are two basic keys to success. Use Information Sheet, Sections X through XIII to emphasize techniques for successful group presentations.

SUGGESTIONS:

- Show film *J. J. Gets to His Feet*.
- Help students prepare and refine their speeches by videotaping some of the students' group presentations.

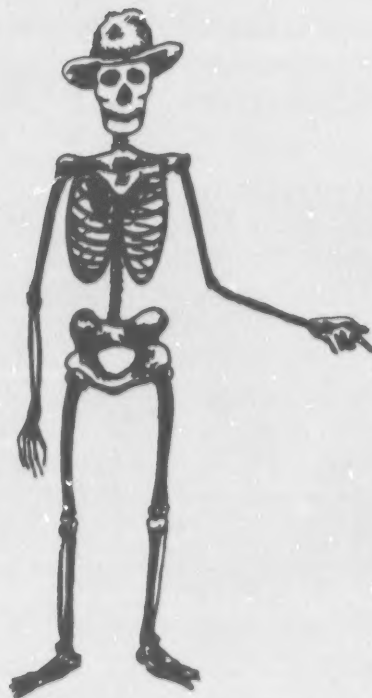
- G. Give test.

III. Unit references

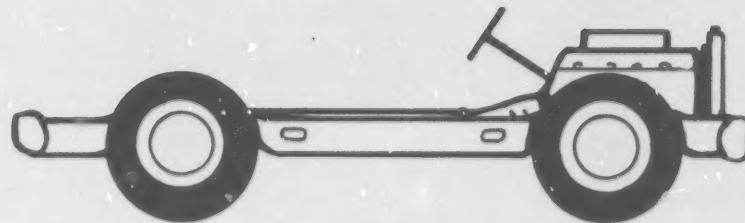
- A. Carnegie, Dale. *How To Develop Self-Confidence and Influence People by Public Speaking*. New York: Pocket Books, Inc., Division of Simon and Schuster, 1977.
- B. Eisenson, Jon, and Paul H. Boase. *Basic Speech*. New York: The Macmillan Company, 1975.
- C. *How to Make Better Speeches*. New York: Cities Service Oil Company, Division of Marketing Training, 1964.
- D. *Leadership of Youth Groups*. Kansas City: Farmland Industries, n.d.
- E. Oliver, Robert T., and Rupert L. Cartright. *Effective Speech*. New York: Holt, Rinehart, and Winston, n.d.
- F. Zigler, Zig. *See You at the Top*. Gretna, Louisiana: Pelican Publishing Company, 1982.

What Is an Outline?

A Skeleton



or a Frame



An outline forms the framework of a story, essay, or speech.

Principal Parts of an Outline

- I. **INTRODUCTION:** Arouses interest in you and indicates your appreciation of the audience.
- II. **BODY:** Develops the main idea; lets the audience know what they are to hear and prepares them for good listening.
- III. **CONCLUSION:** Summarizes, reviews, urges action, or gains respect for ideas expressed.

What Should an Outline Look Like?

I. INTRODUCTION

II. BODY

A. First main point

- 1. Subpoint #1**
- 2. Subpoint #2**

B. Second main point

- 1. Subpoint #1**
- 2. Subpoint #2**

III. CONCLUSION

MAKING A GROUP PRESENTATION UNIT III

INFORMATION SHEET

I. Terms and definitions

- A. Outline — Logical organization of ideas that forms the framework of any story, essay, or other form of information
- B. Gesture — Facial expression or body motion used to emphasize an idea (Figures 1 and 2)

EXAMPLES:

FIGURE 1

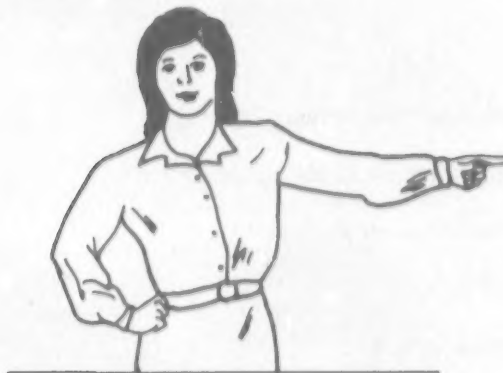


FIGURE 2



- C. Résumé — Short account of a person's career and qualifications; prepared by a person applying for a position
- D. Quotation — Statement in which the exact words of another individual are cited
- E. *Reader's Guide to Periodical Literature* — Monthly publication that identifies current magazine articles
- F. Statistics — Data in the form of facts and figures
- G. Context — Interrelationship of words in a paragraph or sentence that makes clear their exact meanings

II. Types of group presentations

- A. Demonstration — Presentation illustrating the step-by-step procedure for performing a task or assignment

INFORMATION SHEET

- B. Illustrated talk — Presentation using visual aids and objects to assist in making a point
- C. Panel discussion — Presentation in which three or more individuals discuss a topic from different points of view
- D. Prepared speech — Formal presentation following a logical sequence
- E. Oral report — Presentation covering the facts of a speech, report, or written document

III. General purposes of a group presentation

- A. To inform
- B. To influence
- C. To entertain

IV. Guidelines for preparing successful group presentations

- A. Choose an idea that is interesting to the audience
- B. Choose information that is current and timely
- C. Make presentation clear to yourself
(NOTE: Think about logical order.)
- D. Phrase presentation clearly for your audience
- E. Explain any new ideas or terms related to subject (topic)
- F. Practice giving your presentation

V. Steps to follow in developing a group presentation

- A. Select a familiar subject
- B. Research available references
- C. Record key information

EXAMPLES: Write on 3 x 5 cards; clip information; tape information; make copies of information.

- D. Develop an outline
- E. Write a rough draft

INFORMATION SHEET

- F. Revise rough draft
- G. Type or print the final copy

VI. Guidelines to follow when gathering information

(NOTE: Background information is available for the person who will look for it. The following list includes only a few reference possibilities.)

- A. Check personal books
- B. Review back issues of trade and business magazines
EXAMPLES: *Hoard's Dairyman*, *National Pork Producers*, *The Cattleman*
- C. Check school and public libraries
- D. Use *Reader's Guide to Periodical Literature* to locate magazine articles
- E. Write to associations
EXAMPLES: Oklahoma Cattlemen's Association, Oklahoma Pork Commission, Oklahoma Sheep Grower's Association
- F. Interview a resource person
EXAMPLE: President of a civic club, farmer or rancher, owner of feedstore
- G. Contact appropriate federal, state, or county government agencies
EXAMPLES: County Extension Office, United States Department of Agriculture, County Soil Conservation Office
- H. Check educational facilities
EXAMPLE: Oklahoma State University
- I. Check newspapers
(NOTE: Many newspaper farm editors have very useful information.)

VII. Rules for using quotations and statistics in a presentation

- A. Use only when needed to make a point
- B. Make sure the source and date of information are accurate
- C. Keep the true meaning of the quotations and statistics

(NOTE: Use quotations and statistics in their original context.)

INFORMATION SHEET

VIII. Reasons for using outlines

- A. To show presentation's strengths and weaknesses
- B. To aid in organizing and developing ideas

IX. Principal parts of an outline

- A. Introduction — Beginning of presentation; should attract and motivate audience

(NOTE: The introduction to a speech should get the audience's attention, state the purpose, relate importance of the topic to the audience, and preview the main points to be covered.)

- B. Body — Central theme of presentation; carries main ideas

(NOTE: The body of a speech carries the speaker's message. It consists of the main points, subdivisions, and supporting detail. Its main objective is to develop fully the theme of your presentation.)

- C. Conclusion — End of presentation; reviews or summarizes main points of presentation, or asks for action

(NOTE: The end of a speech is just as important as the beginning and must be accorded its proper allotment of preparation. Your conclusion must do two things: give your audience a feeling of completeness or satisfaction in terms of your having done what you set out to do, and center attention on the whole idea of your speech rather than on any part of it. In short, it must drive home the central message of the speech.)

X. Ways to make a good first impression

- A. Be neatly groomed
- B. Be prepared

(NOTE: The best way to be prepared is to practice your presentation until you know it well and can deliver it smoothly.)

- C. Let all important actions, objects, and aids be seen clearly
- D. Be enthusiastic and confident
- E. Recognize that some fear is normal; do not get too upset
- F. Speak clearly and in a pleasant tone of voice

INFORMATION SHEET

XI. Ways to develop and add meaning to the delivery of a group presentation

- A. Maintain eye contact
- B. Gesture

EXAMPLES: Use your hands; vary facial expression.

(NOTE: Be yourself, but do not overact. Overacting focuses the audience's attention on the speaker, not on the speech.)

- C. Maintain good posture
- D. Move around
- E. Use voice control
- F. Use visuals

XII. Reasons for using gestures in a group presentation

- A. To emphasize specific thoughts
- B. To convey attitudes or moods
- C. To express thoughts and feelings

XIII. Ways to develop proper delivery

- A. Practice presentation in front of mirror
- B. Use tape or video recorder for evaluating presentation
- C. Give presentation in front of another person

ASSIGNMENT SHEET #1

[illegible]

MAKING A GROUP PRESENTATION
UNIT III

ASSIGNMENT SHEET #2 — INTRODUCE A SPEAKER

NAME _____

SCORE _____

As an FFA member, you may be asked to introduce a guest speaker for a banquet or other type of school event. The way that you introduce a guest speaker can help or hinder the speaker's presentation.

Using the information given below, the Information Sheet, and the sample résumé included in this assignment sheet, select a topic for the speaker's presentation; write, and then give a one-minute introduction.

Specific Information for Introducing Guest Speakers

- *Set a time limit:* Before your introduction, tell your speaker that he or she is to speak for twenty-five minutes and that a five-minute warning will be given before time is up.
- *Review speaker's résumé:* Choose information for use in the introduction. Educational and community activities are always appropriate to use.
- *Make few remarks:* Do not start with the speaker's birthdate and relate every event of the speaker's life. Mention only those past experiences that relate directly to the subject of the speech that the speaker is giving.
- *Do not try to capture the audience with your personality:* Avoid telling a string of funny stories or giving your knowledge of the subject. Remember, the speaker is the one who will give the presentation.
- *Create suspense:* Create the thought that what the speaker is about to say is important, and mention the speaker's name only once, at the end of your remarks; then stay on the platform with the speaker and lead the applause. Return to your chair during applause.
- *Never apologize:* If the speaker is a substitute or fill-in due to a program change, do not apologize or make excuses.
- *Make sure that you pronounce the speaker's name correctly:* The speaker's name should be given at the end of the introduction, not at the beginning.

ASSIGNMENT SHEET #2

SAMPLE:

SPEAKER'S RÉSUMÉ

Name: Bob Patton

Education: M.S. in Agriculture Education, Oklahoma State University, 1970
B.S. in Agriculture Education, Oklahoma State University, 1966

Present Position: Coordinator, Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education
Director, Midwest Curriculum Coordination Center
Council Member, National Network for Curriculum Coordination in Vocational and Technical Education
Member, Board of Directors for Mid-America Vocational Curriculum Consortium

Job History: State Department of Vocational and Technical Education
Coordinator, Curriculum and Instructional Materials Center, 1976-present
Coordinator, Graphics Division, 1975-1976
Assistant Coordinator, Curriculum and Instructional Materials Center, 1973-1975
Agriculture Curriculum Specialist, 1970-1973
Vocational Agriculture Instructor, Sasakwa, Oklahoma, 1966-1970

Activities: Provided technical assistance and workshops for curriculum development and/or its implementation in Colorado, Missouri, Nebraska, North Dakota, South Dakota, Washington, Arkansas, New Mexico, Mississippi, Louisiana, Ohio, Iowa, Kansas, Massachusetts, Hawaii, and Tennessee

Coordinated development of instructional materials for joint apprenticeship training programs for the Associated General Contractors of America and the Rural Electric Cooperatives of Oklahoma

Studied vocational and technical education in the Soviet Union as one of four selected vocational educators

Served as consultant to the National Center for Research in Vocational Education to develop a national dissemination plan for vocational education

Served as board member for American Association for Vocational Instructional Materials

Served as Secretary-Treasurer of Vocational Instructional Materials of American Vocational Association

Served as chairperson of National Council for Curriculum Coordination

Served as chairman of Payne County Sale Committee

ASSIGNMENT SHEET #2

Write your introduction in the space below. If more space is needed, use additional paper.

[illegible]

MAKING A GROUP PRESENTATION
UNIT III

ASSIGNMENT SHEET #3 — GIVE AN ORAL REPORT

NAME _____

SCORE _____

Giving oral reports is one good way to learn public speaking. Giving reports teaches you the procedures for organizing your thoughts, and provides practice for getting up in front of groups. If you read the report, highlight the important parts and read slowly.

Select a magazine that contains articles relevant to your Supervised Occupational Experience Program. Review the articles, and find one that is timely and interesting. Use this article as the basis of the text for your report. Complete the following information, and then write your report in the space provided.

A. Name of magazine _____

B. Name of article _____

C. Date of article _____

D. Author of article _____

E. Briefly describe in your own words what the article was about. _____

F. List below some of the main points or facts contained in the article.

(NOTE: Accurately copy the facts or points directly from the article.)

ASSIGNMENT SHEET #3

- G. Did the article reveal to you any information you can use with your Supervised Occupational Experience Program? Yes_____ No_____

If "yes," what information can you use? _____

- H. Using relevant and interesting information contained in the article, write a two- to three-minute report. Use the space below and on the next page to write your report. Be prepared to give your report to the class.

ASSIGNMENT SHEET #3

This image shows a full page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are some small dark specks and faint smudges scattered across the surface, likely due to the scanning process or the age of the paper. No text or other markings are present.

**MAKING A GROUP PRESENTATION
UNIT III****ASSIGNMENT SHEET #4 — PARTICIPATE IN A PANEL DISCUSSION**

NAME _____

SCORE _____

A panel discussion gives you an opportunity to speak for or against an issue. However, as a panel speaker, you will be allowed only a few minutes to state your opinion; therefore, you must select your words carefully if you are to express your opinion well. Prepare to participate in a panel discussion using the situation below.

You and three other individuals (classmates) have been selected to participate in the discussion. The debate is scheduled to be sixteen minutes long. Each person is allowed two minutes for opening remarks and one minute to summarize his or her opinions. Two individuals will speak for the issue, and two will speak against the issue.

Select a topic, and prepare your opening remarks and closing summary. You may speak for or against the issue. The topics below may be used for the discussion.

Topics for Debats

- Increase FFA dues by \$5.00
- Change the FFA colors
- Require that all FFA meetings be held at night
- Decrease the number of delegates a chapter can take to the State FFA Convention

Write the title of your discussion topic, and then, on the following page, write opening remarks and a closing summary expressing your opinion for or against the issue you have chosen.

Topic: _____

ASSIGNMENT SHEET #4

A. Opening remarks

(NOTE: In your opening remarks, state your position and reason[s] for this position.)

B. Closing summary

(NOTE: The closing summary should be a summary of your opening remarks or should ask for action.)

MAKING A GROUP PRESENTATION

UNIT III

ASSIGNMENT SHEET #5 — WRITE AN OUTLINE FOR A THREE-MINUTE SPEECH

NAME _____ SCORE _____

You have been asked to give a three-minute speech for a civic club meeting about FFA. Review the subject and start collecting information.

After you have reviewed the source material, outline your speech, using the space below and on the back of this page. Have the instructor evaluate the completed outline.

Topic: _____

List of resources used: _____

Outline

ASSIGNMENT SHEET #5

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are some small, dark specks and faint smudges scattered across the surface, likely due to dust or imperfections in the paper or scanning process. No text or other markings are present on the page.

MAKING A GROUP PRESENTATION
UNIT III

ANSWERS TO ASSIGNMENT SHEETS

(NOTE: Use the following criteria as an aid in evaluating Assignment Sheets #1 through #5.)

Assignment Sheet #1 — Evaluated to the satisfaction of the instructor

- A. Did the student have enough materials for a one-minute talk?
- B. Did the information flow from point to point?
- C. Did the student present information that described the speaker?
- D. Could you identify the speaker from the information given?

Assignment Sheet #2 — Evaluated to the satisfaction of the instructor

- A. Did the introductory remarks flow smoothly?
- B. Was the information presented in a positive, enthusiastic manner?
- C. Did the student use the additional criteria given in Assignment Sheet #2?

Assignment Sheet #3 — Evaluated to the satisfaction of the instructor

- A. Was the article timely?
- B. Did the student identify the main points of the article?
- C. Did the student paraphrase the article, or copy it word for word?
- D. Did the student identify ways that the article related to his or her Supervised Occupational Experience Program?

Assignment Sheet #4 — Evaluated to the satisfaction of the instructor

- A. Did the student take a position and stick with it?
- B. Did the student present specific reasons that justified the position?
- C. Did the student have a good closing summary that restated the position?

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #5 — Evaluated to the satisfaction of the instructor

- A. Did the student select an appropriate introduction, and did the introduction identify the main point of the subject being presented?
- B. Did the student use correct outline form?
- C. Did the student have a minimum of two main points in the body of the outline?
- D. Did the student have a good conclusion to the outline, and was the conclusion appropriate for the talk?
- E. Did the conclusion leave the audience with something to remember and to think about?

MAKING A GROUP PRESENTATION UNIT III

TEST

NAME _____

SCORE _____

1. Match to their correct definitions terms associated with making a group presentation. Write the correct numbers in the blanks.

_____a. Monthly publication that identifies current magazine articles

_____b. Short account of a person's career and qualifications; prepared by person applying for a position

_____c. Data in the form of facts and figures

_____d. Interrelationship of words in a paragraph or sentence that makes clear their exact meanings

_____e. Logical organization of ideas that form the framework of any story, essay, or other form of information

_____f. Facial expression or body motion used to emphasize an idea

_____g. Statement in which exact words of another individual are cited

1. Context

2. *Reader's Guide to Periodical Literature*

3. Outline

4. Statistics

5. Résumé

6. Quotation

7. Gesture

2. Match types of group presentations to their correct descriptions. Write the correct numbers in the blanks.

_____a. Presentation covering the facts of a speech, report, or written document

_____b. Presentation in which three or more individuals discuss a topic from different points of view

_____c. Presentation illustrating the step-by-step procedure for performing a task or assignment

1. Demonstration

2. Prepared speech

3. Oral report

4. Illustrated talk

5. Panel discussion

TEST

- ☐ d. Presentation using visual aids and objects to assist in making a point
 - ☐ e. Formal presentation following a logical sequence
3. Select from the following list general purposes of a group presentation. Write an "X" in the blank before each correct answer.
- ☐ a. To entertain
 - ☐ b. To influence
 - ☐ c. To procrastinate
 - ☐ d. To judge
 - ☐ e. To evaluate
 - ☐ f. To inform
4. Select from the following list guidelines for preparing successful group presentations. Write an "X" in the blank before each correct answer.
- ☐ a. Choose an idea that is interesting to the audience
 - ☐ b. Speak quietly, but quickly, to finish on time
 - ☐ c. Explain any new ideas or terms related to the subject (topic)
 - ☐ d. Phrase presentation clearly for your audience
 - ☐ e. Use technical terms
 - ☐ f. Speak in a flat voice to be clearly understood
 - ☐ g. Make presentation clear to yourself
 - ☐ h. Choose information that is at least one year old
 - ☐ i. Practice giving your presentation
5. Arrange in order steps to follow in developing a group presentation. Write a "1" before the first step, a "2" before the second step, and so on.
- ☐ a. Record key information
 - ☐ b. Develop an outline

TEST

- ☐ c. Research available references
 - ☐ d. Select a familiar subject
 - ☐ e. Type or print the final copy
 - ☐ f. Revise rough draft
 - ☐ g. Write a rough draft
6. Select from the following list guidelines to follow when gathering information. Write an "X" in the blank before each correct answer.
- ☐ a. Use *Reader's Guide to Periodical Literature* to locate magazine articles
 - ☐ b. Check personal books
 - ☐ c. Check school and public libraries
 - ☐ d. Check newspapers
 - ☐ e. Review back issues of trade and business magazines
 - ☐ f. Contact appropriate federal, state, or county government agencies
 - ☐ g. Write to associations
 - ☐ h. Interview a resource person
 - ☐ i. Check educational facilities
7. State rules for using quotations and statistics in a presentation.
- a. _____
 - b. _____
 - c. _____
8. State reasons for using outlines.
- a. _____
 - b. _____

TEST

9. Match principal parts of an outline to their correct definitions. Write the correct numbers in the blanks.

- | | | |
|---------|--|-----------------|
| _____a. | End of presentation; reviews or summarizes main points of presentation, or asks for action | 1. Body |
| _____b. | Beginning of presentation; should attract and motivate audience | 2. Introduction |
| _____c. | Central theme of presentation; carries main ideas | 3. Conclusion |

10. Select from the following list ways to make a good first impression. Write an "X" in the blank before each correct answer.

- _____a. Be neatly groomed
- _____b. Let all important actions, objects, and aids be seen clearly
- _____c. Speak clearly and in a pleasant tone of voice
- _____d. Chew gum to keep mouth moist
- _____e. Be prepared
- _____f. Be enthusiastic and confident
- _____g. Recognize that some fear is normal; do not get too upset
- _____h. Use podium for balance
- _____i. Check microphone by blowing into it

11. Select from the following list ways to develop and add meaning to the delivery of a group presentation. Write an "X" in the blank before each correct answer.

- _____a. Maintain eye contact
- _____b. Dress properly
- _____c. Gesture
- _____d. Use visuals
- _____e. Maintain good posture

TEST

- ____f. Move around
- ____g. Use technical terms
- ____h. Use voice control

12. State reasons for using gestures in a group presentation.

- a. _____
- b. _____
- c. _____

13. State ways to develop proper delivery.

- a. _____
- b. _____
- c. _____

(NOTE: Test questions 14-18 list the assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

- 14. Give a prepared one-minute talk.
- 15. Introduce a speaker.
- 16. Give an oral report.
- 17. Participate in a panel discussion.
- 18. Write an outline for a three-minute speech.

MAKING A GROUP PRESENTATION
UNIT III

ANSWERS TO TEST

1. a. 2
b. 5
c. 4
d. 1

- e. 3
f. 7
g. 6

2. a. 3
b. 5
c. 1

- d. 4
e. 2

3. a, b, f

4. a, c, d, g, i

5. a. 3
b. 4
c. 2
d. 1
e. 7
f. 6
g. 5

6. a, b, c, d, e, f, g, h, i

7. a. Use only when needed to make a point
b. Make sure the source and date of information are accurate
c. Keep the true meaning of the quotations and statistics
8. a. To show presentation's strengths and weaknesses
b. To aid in organizing and developing ideas

ANSWERS TO TEST

9. a. 3
b. 2
c. 1
10. a, b, c, e, f, g
11. a, c, d, e, f, h
12. a. To emphasize specific thoughts
b. To convey attitudes or moods
c. To express thoughts and feelings
13. a. Practice presentation in front of mirror
b. Use tape or video recorder for evaluating presentation
c. Give presentation in front of another person
14. Evaluated to the satisfaction of the instructor
15. Evaluated to the satisfaction of the instructor
16. Evaluated to the satisfaction of the instructor
17. Evaluated to the satisfaction of the instructor
18. Evaluated to the satisfaction of the instructor

ORIENTATION TO FFA RECORD KEEPING UNIT 1

UNIT OBJECTIVE

After completing this unit, the student should be able to choose and plan a Supervised Occupational Experience Program. The student will show this knowledge by completing assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing of this unit, the student should be able to

1. Match terms associated with FFA record keeping to their correct definitions.
2. Describe types of Supervised Occupational Experience Programs.
3. State reasons for participating in a Supervised Occupational Experience Program.
4. Select from a list points to consider when choosing a Supervised Occupational Experience Program.
5. List factors to consider in developing a plan for a long-term Supervised Occupational Experience Program.
6. Select an occupational objective.
7. Prepare a plan for a long-term Supervised Occupational Experience Program.
8. Develop an agreement for a Supervised Occupational Experience Program in production agriculture.

ORIENTATION TO FFA RECORD KEEPING
UNIT I

SUGGESTED ACTIVITIES

- I. Unit contents
 - A. Objective sheet
 - B. Suggested activities
 - C. Information sheet
 - D. Assignment sheets
 - 1. Assignment Sheet #1 — Select an Occupational Objective
 - 2. Assignment Sheet #2 — Prepare a Plan for a Long-Term Supervised Occupational Experience Program
 - 3. Assignment Sheet #3 — Develop an Agreement for a Supervised Occupational Experience Program in Production Agriculture
 - E. Answers to assignment sheets
 - F. Test
 - G. Answers to test
- II. Instructor's guide
 - A. Order materials to supplement unit.
 - 1. *Future Farmers of America Supervised Occupational Experience Program Record Book*. Available from the State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.

(NOTE: Order a copy for each student.)
 - 2. Film — *SOE: Bridging the Gap*. Color, 12 minutes, National FFA Center, 1982. Available from National FFA Center, 5632 Mount Vernon Memorial Highway, P.O. Box 15160, Alexandria, Virginia 22309.

(NOTE: This film is available to Oklahoma teachers on a free-loan basis. Oklahoma teachers may order from the State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074. Out-of-state teachers must order from the address listed above.)

SUGGESTED ACTIVITIES

- B. Introduce unit by explaining how the SOE Program and record keeping are integral parts of FFA.

SUGGESTIONS:

- Invite a more experienced or former FFA member to discuss how the SOE Program and record keeping are the starting points for students who wish to receive various proficiency awards and to earn advanced degrees.
- Relate the detailed planning of successful SOE Programs to business planning.
- Cite students' successes related to SOE Program activities and expansions.
- Challenge students to make the most of their SOE Program; explain how other students, teachers, parents, and relatives are involved.
- Point out that in later years, record keeping can be helpful in a full-time professional occupation.
- Show the film *SOE: Bridging the Gap*.

(NOTE: It would be very beneficial to show this film to a joint meeting of students and parents because it does an excellent job of explaining how the SOE Program, FFA, and vocational agriculture are related.)

- C. Provide students with unit and specific objectives.
- D. Discuss unit and specific objectives.
- E. Provide students with information and assignment sheets.
- F. Discuss information sheets and assignment sheets.
1. Discuss terms and definitions in Information Sheet, Section I. Explain that knowledge of these terms is basic to an understanding of a record-keeping system. Have students complete Assignment Sheet #1.

SUGGESTIONS:

- Use the chalkboard to record students' names and their areas of interest.
- Explain that information completed in Assignment Sheet #2 is included in state reports.

SUGGESTED ACTIVITIES

2. Introduce the variety of Supervised Occupational Experience Programs; use Information Sheet Section II.

SUGGESTIONS:

- Invite more experienced or former FFA members to share their experiences with their SOE Programs.
 - Make arrangements for a field trip to a variety of SOE Programs.
3. Emphasize the variety of benefits gained from having a Supervised Occupational Experience Program; use Information Sheet, Section III.

SUGGESTIONS:

- Have more experienced or former FFA members or officers discuss how they benefitted from their SOE Programs.
 - Have students use Section III to poll individuals in the community on their opinions related to benefits of their SOE Programs.
4. Discuss factors to consider when choosing an SOE Program; use Information Sheet, Section IV and Assignment Sheet #2.

SUGGESTIONS:

- Have former students tell how and why they selected their particular SOE Programs.
 - Invite for a panel discussion professional people who attribute their success to their beginnings and experiences with the FFA, vocational agriculture, and their SOE Programs.
5. Discuss factors to consider in developing a plan for a long-term SOE Program, use Information Sheet, Section V and Assignment Sheet #3.

SUGGESTIONS:

- Make and hand out copies of senior students' SOE Program plans as examples.
- Point out to students that their plan can be for one year, two years, or all four years.
- Make arrangements to explain SOE Program plans at a parent/club meeting program.

G. Give test.

SUGGESTED ACTIVITIES

III. Unit references

- A. Carwin, Merle A. *Supervised Occupational Experience Manual*. Danville, Illinois: Interstate Printers and Publishers, Inc., n.d.
- B. *Future Farmers of America Supervised Occupational Experience Program Record Book*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1984.

ORIENTATION TO FFA RECORD KEEPING
UNIT I

INFORMATION SHEET

I. Terms and definitions

- A. Supervised Occupational Experience (SOE) Program — Part of the vocational agriculture program in which students take part in production agriculture or agribusiness learning experiences to gain knowledge, skill, income, and on-the-job experience under the supervision of the vocational agriculture instructor

- B. Occupational objective — A person's career goal

(NOTE: The occupational objective is usually given a corresponding code number, which is referred to as the *occupational objective code*.)

- C. Plan for long-term SOE Program — Process of increasing scope or broadening the SOE Program; setting goals for the SOE Program

(NOTE: The long-term SOE program plan is usually a four-year plan beginning in Vocational Agriculture I in ninth grade. It should outline the scope of each enterprise for each year, as well as reflect plans to broaden into new enterprises through the vocational agriculture career.)

- D. Enterprise — Category of the total business for which individual records are kept as a part of the total record-keeping system

EXAMPLES: Swine, beef, wheat, dairy, agribusiness, land, equipment

(NOTE: Any service performed, or nontraditional production agriculture product for which income is received, would be considered agribusiness.)

- E. Agreement for student's SOE Program in production agriculture — Statement of accepted responsibilities in regard to production agriculture enterprises

(NOTE: A self-explanatory Placement Agreement for Agribusiness Students is provided in the FFA *Record Book* for students in Vocational Agriculture Occupational Training [VAOT].)

- F. Scope — Extent, size, or volume of the SOE Program or an enterprise in the SOE Program

INFORMATION SHEET

II. Types of Supervised Occupational Experience Programs

(NOTE: Records should be kept on all of these programs.)

- A. Ownership — Student has personal ownership of the materials or other inputs required for the enterprise(s)

EXAMPLES: Production agriculture — Student-owned and operated farming or ranching program

Agribusiness — Student-owned and operated agricultural enterprises other than production agriculture

- B. Placement — Student is placed in production agriculture, in agribusiness, in school laboratories, or in community facilities to gain practical agricultural experiences and earn wages

(NOTE: The students do not own the facilities, equipment, or products, but work for wages.)

III. Reasons for participating in a Supervised Occupational Experience Program

- A. Learning responsibility
- B. Gaining experience
- C. Earning money
- D. Developing management abilities
- E. Preparing for a career
- F. Learning record keeping
- G. Learning skills or improving skills in agriculture
- H. Becoming established in farming or an agribusiness occupation
- I. Developing self-discipline

IV. Points to consider when choosing a Supervised Occupational Experience Program

- A. Personal interest
- B. Background and knowledge
- C. Finances available

INFORMATION SHEET

D. Facilities available

(NOTE: Adequate facilities will be necessary for a production agriculture project.)

E. Transportation needs and availability

F. Local Vocational Agriculture Department requirements

V. Factors to consider in developing a plan for a long-term Supervised Occupational Experience Program

A. Occupational objective area

B. Facilities and finances available, as needed, for expansion

C. Net income expected

D. Degree of independence expected

E. Anticipated scope of program in four years

F. Areas of interest

G. Support of parents or other parties

ORIENTATION TO FFA RECORD KEEPING UNIT I

ASSIGNMENT SHEET #1 — SELECT AN OCCUPATIONAL OBJECTIVE

NAME _____

SCORE _____

As you begin your vocational agriculture career, you should have in mind an appropriate area of interest or occupational objective.

Study the following list of occupational objectives and their descriptions. Then choose the objective and code number that most closely matches your area of interest, and record it at the end of the assignment sheet. If you are uncertain about your particular interest, please choose Agricultural Production, General 010301. You will have an opportunity to change your occupational objective later in the vocational agriculture program if you desire.

After completing this assignment sheet, turn it in to your instructor.

OCCUPATIONAL OBJECTIVE AND CODE

DESCRIPTION

Agricultural Production, General 010301

Planning and economically using facilities, land, water, machinery, chemicals, finance, and labor in the production of plant and animal products

Agricultural Electrification, Power, and Controls 010202

Safe use of electricity, electrical power, equipment, and automatic controls

Agricultural Mechanics, Construction and Maintenance Skills 010203

Selecting, safely using, and maintaining hand and power tools, arc and acetylene welding equipment, and construction materials

Agricultural Power Machinery 010204

Selecting, operating, servicing, maintaining and repairing a variety of agricultural power units and agricultural machinery and equipment to include gas, diesel, and electric units; welding; refrigeration; hydraulics and other power systems

Agricultural Structures, Equipment and Facilities 010205

Planning, selecting materials for, constructing, utilizing, and maintaining agricultural structures, equipment, and environmental facilities such as barns, sheds, milking parlors, manure and other waste handling structures and equipment, forage and grain storage structures, and greenhouses

ASSIGNMENT SHEET #1

OCCUPATIONAL OBJECTIVE AND CODE	DESCRIPTION
Soil and Water Mechanical Practices 010206	Implementing soil and water management by surveying, planning, laying out, constructing, using, and maintaining irrigation, drainage, and run-off systems
Animal Production 010302	Selection, breeding, physiology, nutrition, health, housing, feeding, and marketing of animals such as dairy cattle, beef cattle, horses, swine, sheep, poultry, bees, rabbits, cats, dogs, and earthworms
Crop Production 010304	Production of all types of marketable agricultural crops; soils work and all types of plant work and identification, including use of chemicals in plant pest and disease control
Food Products 010402	Processing food products such as meat, fish, poultry, eggs, dairy products, fruits and vegetables, and cereal grains for sale and consumption
Nonfood Products 010403	Processing nonfood products, such as cotton, tobacco, and wool
Agricultural Services 010502	Providing agricultural services such as custom work, equipment operation and maintenance, management and finance; includes small animal services such as breeding, horseshoeing, pet services, and animal hospital services
Agricultural Supplies Marketing 010503	Purchasing, storing, grading, transporting, and marketing agricultural supplies such as feeds, seeds, fertilizers, chemicals, machinery and parts, and products such as livestock and grains
Animal Grooming 010504	Grooming animals by clipping, bathing, cutting and conditioning hair, and caring for hooves and nails
Animal Training 010505	Teaching animals to obey commands, competing in shows, and performing all types of activities necessary for animal competition and performances

ASSIGNMENT SHEET #1

OCCUPATIONAL OBJECTIVE AND CODE	DESCRIPTION
Horseshoeing 010506	Selecting and fitting shoes; shaping and nailing shoes to animals' hooves
Arboriculture 010602	Cultivating and maintaining woody plants and trees used for decoration and shade purposes
Floriculture 010603	Producing flowers, foliage, and related plant materials in fields and greenhouses for ornamental purposes; and arranging, packaging, and marketing these materials
Greenhouse Operation and Management 010604	Producing plants under glass and in other artificial environments
Landscaping 010605	Locating, planting, and maintaining turf, plants, shrubs, or devices for the beautification of home grounds or other areas of human habitation and recreation
Nursery Operation and Management 010606	Producing turf, plants, shrubs, and trees for the purpose of transplanting or propagating them
Turf Management 010607	Establishing, managing, and maintaining grassed areas for ornamental or recreational purposes
Forest Products Utilization 030403	Selecting, grading, and marketing forest raw materials for conversion to consumer goods; maintenance, safe operation, and repair of related equipment
Logging 030405	Harvesting and transporting trees as a crop; maintaining, safely operating, and repairing logging equipment and machinery

 Your occupational objective title

 Code number

ORIENTATION TO FFA RECORD KEEPING
UNIT IASSIGNMENT SHEET #2 — PREPARE A PLAN FOR A LONG-TERM
SUPERVISED OCCUPATIONAL EXPERIENCE PROGRAM

NAME _____ SCORE _____

In order to gain experience, it is necessary to set some goals and expectations. These goals should include expansion and broadening into other areas when possible.

Study the sample plan on the next page. On the form that follows, write your own plan for the long-term Supervised Occupational Experience Program. Organize your plan by school year and by individual enterprise.

After listing your enterprise(s) and completing your long-term plan, show this assignment sheet to your instructor for approval, and then transfer the information to your *FFA Record Book*.

Your chosen or planned enterprise(s) is/are

_____	_____
_____	_____
_____	_____
_____	_____

ASSIGNMENT SHEET #2

STUDENT'S PLAN FOR A LONG-TERM SUPERVISED
OCCUPATIONAL EXPERIENCE PROGRAM
(SAMPLE)

1984-85

SWINE: I plan to purchase a bred gilt in the fall of my freshman year, and to keep one or two gilt pigs from the first litter to expand my swine breeding program.

1985-86

SWINE: I plan to purchase my own boar in the fall and possibly start doing outside breeding to provide income for my swine enterprise. I plan to expand to breeding six of my own sows by the Spring of 1986. I also plan to purchase adequate equipment as my swine enterprise grows.

WHEAT: I plan to start a crop-share wheat enterprise with my parents in the fall of 1985.

1986-87

SWINE: Continue with swine enterprise at the same level, with a farrowing to finishing operation.

WHEAT: Continue crop-share enterprise with parents and try to locate land to cash rent for additional wheat acreage.

BEEF: Purchase stocker calves for wheat pasture; sell the calves in the Spring.

AGRI-BUSINESS: Provide labor to parents in exchange for farm equipment usage.

1987-88

SWINE: Continue and expand as profits allow.

WHEAT: Continue previous year's level and possibly cash rent additional acres.

BEEF: Increase number of stockers as wheat pasture is available.

AGRI-BUSINESS: Continue arrangement with parents.

ASSIGNMENT SHEET #2

STUDENT'S PLAN FOR A LONG-TERM SUPERVISED
OCCUPATIONAL EXPERIENCE PROGRAM19 _____

_____19 _____

_____19 _____

_____19 _____

ORIENTATION TO FFA RECORD KEEPING
UNIT I

ASSIGNMENT SHEET #3 — DEVELOP AN AGREEMENT
FOR A SUPERVISED OCCUPATIONAL EXPERIENCE PROGRAM
IN PRODUCTION AGRICULTURE

NAME _____ SCORE _____

All persons involved with your SOE Program in production agriculture should accept responsibilities. A form on which these responsibilities can be recorded is provided in the *FFA Record Book*. All parties mentioned on the form should meet to discuss their various responsibilities.

Study the sample agreement on the next page, and then complete the blank form that follows for your own production agriculture enterprise(s).

After approved by all parties involved and by your instructor, transfer the agreement to your *FFA Record Book*.

ASSIGNMENT SHEET #2

**AGREEMENT FOR STUDENT'S SUPERVISED OCCUPATIONAL
EXPERIENCE PROGRAM IN PRODUCTION AGRICULTURE**

SAMPLE:

This Agreement is entered into this ____ day of _____ 19 ____ for a period of one year by and between _____ and _____, and covers the student's enterprises in production agriculture.

This Agreement contains statements concerning responsibility for providing equipment, land, buildings, capital, management, feed, vet supplies, seed, fuel, fertilizer, transportation, etc.

Student agrees to provide: (Specify details by enterprises)

Swine: Capital for purchases by borrowing at the local bank as needed; labor, management, feed, vet supplies, equipment

Beef: Capital for purchases by borrowing, as needed, at Farmers Home Administration (FmHA) or other lending agency; feed, management, vet supplies, labor for parents' beef enterprises as needed

Wheat: Labor, seed, chemicals, fertilizer, and labor as needed for parents' crop enterprises.

Land: Capital for taxes, improvements

Equipment: Capital and labor for repairs and maintenance and new purchases

Student is to receive: (Specify details by enterprises)

Swine: Income, risk; land and transportation from parents in exchange for labor

Beef: Income, risk; pasture, as needed; buildings; equipment use; transportation from parents in exchange for labor in parents' beef enterprise

Wheat: Yield of the crop; use of parents' equipment, fuel, and transportation, as needed, in exchange for labor in crop enterprises

Land: Yield from the land

(continued)

ASSIGNMENT SHEET #2

Equipment: Use of own equipment, and declining value due to depreciation

Parent or "Other Party" agrees to provide: (Specify details by enterprises)

Swine: Land and transportation in exchange for student's labor

Beef: Pasture, as needed; buildings, equipment use, and transportation in exchange for student's labor in parents' beef enterprise

Wheat: Equipment, fuel, and transportation, as needed for student's wheat enterprise, in exchange for labor in parents' crop enterprises

Land:

Equipment:

Parent or "Other Party" is to receive: (Specify details by enterprises)

Swine: Student's labor in farm enterprises

Beef: Student's labor, as needed, in beef enterprise

Wheat: Student's labor in crop enterprise

Land:

Equipment:

Responsibility of Vocational Agriculture Teacher:

Signatures _____ (Student)

_____ (Parent or "Other Party")

_____ (Vocational Agriculture Teacher)

ASSIGNMENT SHEET #3

**AGREEMENT FOR STUDENT'S SUPERVISED OCCUPATIONAL
EXPERIENCE PROGRAM IN PRODUCTION AGRICULTURE**

This Agreement is entered into this ____ day of _____ 19 ____ for a period of one year by and between _____ and _____, and covers the student's enterprises in production agriculture.

This Agreement contains statements concerning responsibility for providing equipment, land, buildings, capital, management, feed, vet supplies, seed, fuel, fertilizer, transportation, etc.

Student agrees to provide: (Specify details by enterprises)

Student is to receive: (Specify details by enterprises)

(continued)

ASSIGNMENT SHEET #3

Parent or "Other Party" agrees to provide: (Specify details by enterprises)

Parent or "Other Party" is to receive: (Specify details by enterprises)

Responsibility of Vocational Agriculture Teacher:

Signatures _____ (Student)

_____ (Parent or "Other Party")

_____ (Vocational Agriculture Teacher)

ORIENTATION TO FFA RECORD KEEPING
UNIT I

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1 — Evaluated to the satisfaction of the instructor

Assignment Sheet #2 — Evaluated to the satisfaction of the instructor

Assignment Sheet #3 — Evaluated to the satisfaction of the instructor

ORIENTATION TO FFA RECORD KEEPING UNIT I

TEST

NAME _____

SCORE _____

1. Match terms associated with FFA record keeping to their correct definitions. Write the correct numbers in the blanks.

- | | | |
|----------|--|--|
| _____ a. | Process of increasing scope or broadening the SOE Program; setting goals for the SOE Program | 1. Occupational objective |
| _____ b. | Part of the vocational agriculture program in which the students take part in production agriculture or agribusiness learning experiences to gain knowledge, skill, income, and on-the-job experience under the supervision of the vocational agriculture instructor | 2. Supervised Occupational Experience (SOE) Program |
| _____ c. | Category of the total business for which individual records are kept as a part of the total record-keeping system | 3. Enterprise |
| _____ d. | Statement of accepted responsibilities in regard to production agriculture enterprises | 4. Plan for long-term SOE Program |
| _____ e. | A person's career goal | 5. Agreement for student's SOE Program in production agriculture |
| _____ f. | Extent, size, or volume of the SOE Program or an enterprise in the SOE Program | 6. Scope |

2. Describe the types of Supervised Occupational Experience Programs below.

- a. Ownership — _____

- b. Placement — _____

TEST

3. State four reasons for participating in a Supervised Occupational Experience Program.

a. _____
b. _____
c. _____
d. _____

4. Select from the following list points to consider when choosing a Supervised Occupational Experience Program. Write an "X" in the blank before each correct answer.

- ____a. Finances available
____b. Relatives' agricultural backgrounds
____c. Personal preference of vo-ag instructor
____d. Transportation needs and availability
____e. Background and knowledge
____f. Current feed prices
____g. Facilities available
____h. Local Vocational Agriculture Department requirements

5. List four factors to consider in developing a plan for a long-term Supervised Occupational Experience Program.

a. _____
b. _____
c. _____
d. _____

(NOTE: Test questions 6-8 list the assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

6. Select an occupational objective.
7. Prepare a plan for a long-term Supervised Occupational Experience Program.
8. Develop an agreement for a Supervised Occupational Experience Program in production agriculture.

ORIENTATION TO FFA RECORD KEEPING
UNIT I

ANSWERS TO TEST

1.
 - a. 4
 - b. 2
 - c. 3
 - d. 5
 - e. 1
 - f. 6
2. Description should include the following
 - a. Ownership — Student has personal ownership of the materials or other inputs required for the enterprise(s)
 - b. Placement — Student is placed in production agriculture, in agribusiness, in school laboratories, or in community facilities to gain practical agricultural experiences and earn wages
3. Answer should include any four of the following
 - a. Learning responsibility
 - b. Gaining experience
 - c. Earning money
 - d. Developing management abilities
 - e. Preparing for a career
 - f. Learning record keeping
 - g. Learning skills or improving skills in agriculture
 - h. Becoming established in farming or an agribusiness occupation
 - i. Developing self-discipline

ANSWERS TO TEST

4. a, d, e, g, h
5. Answer should include any four of the following
 - a. Occupational objective area
 - b. Facilities and finances available, as needed, for expansion
 - c. Net income expected
 - d. Degree of independence expected
 - e. Anticipated scope of program in four years
 - f. Areas of interest
 - g. Support of parents or other parties
6. Evaluated to the satisfaction of the instructor
7. Evaluated to the satisfaction of the instructor
8. Evaluated to the satisfaction of the instructor

INVENTORIES AND NET WORTH UNIT II

UNIT OBJECTIVE

After completing this unit, the student should be able to recognize and categorize enterprises for the record-keeping system, place values on enterprises, develop a beginning inventory, and complete a net worth statement. The student will show this knowledge by completing the assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with inventories and net worth.
2. State reasons for keeping inventory records.
3. List dates to make beginning inventories.
4. Select from a list items to be included in the Supervised Occupational Experience (SOE) Program inventory.
5. Match inventory methods of valuation to their correct assets.
6. Match assets to their correct inventory units and valuations.
7. List possible record-keeping enterprises.
8. Match types of breeding stock to the correct rules for listing them on inventory.
9. Arrange in order the steps for completing a net worth statement.
10. Classify assets according to enterprise columns.
11. Prepare a sample beginning inventory.
12. Prepare a personal beginning inventory.
13. Prepare a sample net worth statement.
14. Prepare a personal net worth statement.

INVENTORIES AND NET WORTH UNIT II

SUGGESTED ACTIVITIES

I. Unit contents

- A. Objective sheet
- B. Suggested activities
- C. Supplement #1 — Instructions for Concentration Game
- D. Information sheet
- E. Assignment sheets
 - 1. Assignment Sheet #1 — Classify Assets According to Enterprise Columns
 - 2. Assignment Sheet #2 — Prepare a Sample Beginning Inventory
 - 3. Assignment Sheet #3 — Prepare a Personal Beginning Inventory
 - 4. Assignment Sheet #4 — Prepare a Sample Net Worth Statement
 - 5. Assignment Sheet #5 — Prepare a Personal Net Worth Statement
- F. Answers to assignment sheets
- G. Test
- H. Answers to test

II. Instructor's guide

- A. Obtain examples of inventory and net worth forms to supplement unit; make transparencies or copies of the forms.

EXAMPLES: FFA *Record Book* used by a more experienced or former FFA member; inventory and net worth forms used by farmer, rancher, firm, or individual representing agribusiness
- B. Prepare Concentration game to use while teaching Information Sheet, Sections V and VI; see Supplement #1.
- C. Make sure that all students have personal copies of FFA *Record Book*.

(NOTE: The FFA *Record Book* is available through the Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)

SUGGESTED ACTIVITIES

- D. Introduce unit by emphasizing the importance of inventories and net worth statements to the total record-keeping system.

SUGGESTIONS:

- Point out that any lending institution will require inventories and net worth statements before considering loaning money to an individual.
- Discuss the additional financial records that may also be required when applying for loans.

- E. Provide students with objective sheet.

- F. Discuss unit and specific objectives.

- G. Provide students with information and assignment sheets.

- H. Discuss information and assignment sheets.

1. Use Information Sheet, Section I to discuss terms and definitions associated with inventories and net worth.

SUGGESTIONS:

- Have sample inventories and net worth statements available as handouts, or show samples on an overhead projector.
- Be sure to stress to students that beginning inventory information *must* match that of the previous ending inventory information.
- Stress the importance of writing thorough explanations of each entry on the inventory.

2. Use Information Sheet, Section II to discuss reasons for keeping inventory records.

SUGGESTION:

- Remind students that record keeping is essential in order to qualify for proficiency awards and advanced FFA degrees.

3. Use Information Sheet, Section III to inform students about dates to make beginning inventories.

SUGGESTIONS:

- Invite an agribusiness person to discuss how net worth statements and inventories affect his or her tax-related affairs.
- Remind students that on their first beginning inventory, they should delete *January* and write in *September 1*.

SUGGESTED ACTIVITIES

4. Use Information Sheet, Section IV to help students select items that need to be included in the SOE Program inventory.

SUGGESTIONS:

- Show examples of inventories from more experienced or former FFA members' record books.
- Discuss SOE Programs of former Star Farmers and Star Agribusinessmen from previous state and national conventions.

5. Discuss the methods used to establish a value for assets when taking inventory. Use Information Sheet, Section V.

SUGGESTIONS:

- Use Supplement #1, Concentration game, to drill students on matching valuation methods and their descriptions.
- Be sure to emphasize situations that pertain to the SOE Programs of students in your class.
- Use newspaper market reports for the market price assets.

6. Discuss the wide variety of units and valuations used to inventory assets. Use Information Sheet, Section VI.

SUGGESTION:

- Use Supplement #1, Concentration game, to drill students on matching assets to correct units and valuations.

7. Use Information Sheet, Section VII to introduce the variety of enterprise categories used to classify assets in the FFA *Record Book*. Have students complete Assignment Sheet #1.

SUGGESTION:

- Use chalkboard to list assets owned or expected to be owned by students. Leave space to write the correct type of enterprise.

8. Use Information Sheet, Section VIII to discuss rules used for listing breeding stock on inventory.

SUGGESTIONS:

- Record on the chalkboard examples that pertain to the breeding livestock owned by the students in your class.
- Show examples on the chalkboard of situations that may arise in some of the students' SOE Programs.

SUGGESTED ACTIVITIES

9. Have students prepare the sample inventory in Assignment Sheet #2 to your satisfaction before allowing them to prepare their personal inventories in Assignment Sheet #3.
10. Use Information Sheet, Section IX to discuss the steps for completing a net worth statement. Have students complete Assignment Sheet #4. Evaluate Assignment Sheet #4 to your satisfaction before allowing students to complete Assignment Sheet #5.

SUGGESTIONS:

- Use transparency of student's net worth statement in Assignment Sheet #4 to demonstrate the steps.
- Invite a farmer or agribusiness representative to discuss the importance and the uses of a net worth statement in his or her operation. Have the speaker emphasize how the net worth statement is used as a tool to help justify borrowing money.

I. Give test.

III. Unit references

- A. *Future Farmers of America Supervised Occupational Experience Program Record Book*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1984.
- B. Hodgins, Jim, and Leland Myers. *Farm Business Management: Year I*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1979.
- C. Reeder, Dan. *Vocational Agriculture IV*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1973.

SUGGESTED ACTIVITIES

SUPPLEMENT #1 — INSTRUCTIONS FOR CONCENTRATION GAME

PURPOSE

Concentration provides the opportunity to eliminate the boredom of repetition in drilling students to learn the basics. It is an enjoyable classroom activity that allows students to match closely related terms and information.

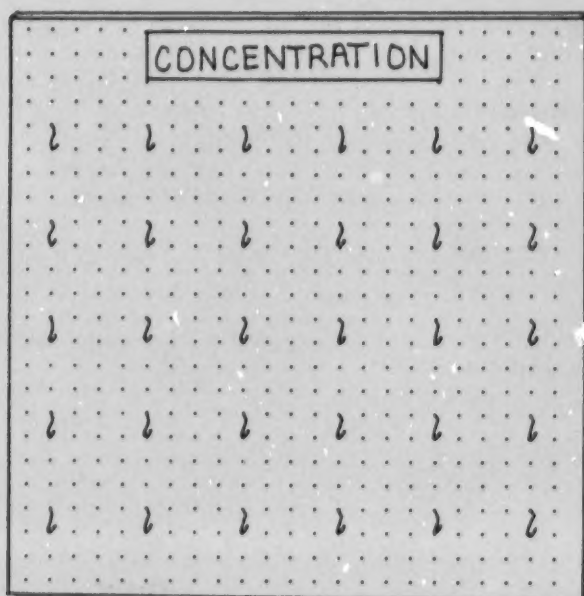
(NOTE: Concentration is a classroom alternative that can be improvised with a very minimal investment of dollars and cents. The basic board can be personalized to address many group and individual learning needs in nearly every subject area.)

PREPARATION

- A. Gather the following materials to construct a basic Concentration board

Pegboard, 24 inches by 30 inches	Scissors
Pegboard hooks, approximately 30 to 36	Glue
Poster board or index cards, all one color	Hole punch
Spray paint, optional	

- B. Paint the pegboard if desired, and allow to dry
- C. Write the word CONCENTRATION on a piece of poster board and glue to the top of the pegboard
- D. Position the pegboard hooks



SUGGESTED ACTIVITIES

SUPPLEMENT #1

- E. Cut 3-by-5-inch cards from colorful poster board (cards should all be the same color), or use unlined index cards
 - F. Number one side of each card from 1 to 36, or adapt to twice the actual number of terms, items, and so on that the student will identify
 - G. Shuffle the numbered cards to mix the numbers, and then write terms, or paste or draw shapes, objects, or pictures on the unnumbered sides of the cards
- (NOTE: If you want students to match terms to their definitions, then write the terms and definitions on the cards, pairing each with a symbol such as a star, circle, etc. Another option is to add two or four wild cards that will match any combination. Be sure to pair every word, shape, object, or picture. Once the cards are made, they can double as flash cards or playing cards to involve students in pairs.)
- H. Punch a hole in the top of each card, and place the cards on the hooks in numerical sequence, with the numbered side showing

PLAY

- A. The beginning student or team selects two numbers

EXAMPLE: 2 and 27

- B. If the words, shapes, objects, or pictures match, the student or team earns a point, or has the opportunity to give a definition, or identify the object or picture to earn a point
- C. If the cards match and the point is earned, the cards that match should remain turned out, with their numbers now facing the board
- D. If the cards do not match, they are returned to their original playing position with numbers facing out, and the turn goes to the opposition
- E. The game continues until the backs of all cards are revealed and matched
- F. The student or team that provides the highest number of matches (points) wins the game

(NOTE: The instructor may want to present a reward or a token of accomplishment to the winning student or team.)

INVENTORIES AND NET WORTH UNIT II

INFORMATION SHEET

I. Terms and definitions

- A. **Beginning inventory** — Itemized list of assets and their values pertaining to the Supervised Occupational Experience (SOE) Program, and listed according to enterprises at the start of the record-keeping period
- B. **Asset** — Any item of value owned or claimed as part of the business
- C. **Unit** — Any fixed quantity, amount, distance, or measure used as a standard for counting or measuring items or assets

EXAMPLES: Livestock counted by *head*, hay measured by *tons* or counted by *bales*, land measured by *acres*, harvested crops measured by *bushels*
- D. **Quantity** — Number of items or units

EXAMPLES: 200 bushels of wheat, 2 tons of hay, 50 pounds of pecans, 4 head of cattle, 3 acres of pasture or wheat
- E. **Unit price** — Monetary value assigned to individual units; used to figure overall value

EXAMPLES: Price/bu (bushel), price/ton, price/cwt (hundredweight)
- F. **Valuation** — Setting a value or a unit price for an item or good
- G. **Scope** — Extent, size, or volume of the SOE Program, or an enterprise in the SOE Program
- H. **Ending inventory** — Itemized list of assets and their values pertaining to the SOE Program, and listed according to enterprises at the close of the record-keeping period
- I. **Net worth** — Difference between total assets and total liabilities
- J. **Liabilities** — Financial claims against a business

EXAMPLES: Unpaid bills, notes, or mortgages owed to individuals or lending institutions
- K. **Lien** — Claim against property for an amount of money owed to someone or to a business

INFORMATION SHEET

- L. Net worth statement — Financial statement that lists the assets and liabilities of the business at a particular time, usually at the end of the accounting year

(NOTE: The net worth statement is also called a *balance sheet*.)

II. Reasons for keeping inventory records

- A. To provide an overall view of the SOE Program
- B. To show growth or decline of the SOE Program
- C. To provide a good management tool
- D. To obtain credit or loans

III. Dates to make beginning inventories

(NOTE: Once a beginning inventory is made, it is never changed.)

- A. First beginning inventory — Soon after entering vocational agriculture program; usually September 1

(NOTE: An inventory will be made at this time only by students who are enrolling for the first time, and who already have assets that will be used in their SOE Programs.)

- B. Remaining beginning inventories — January 1 of each year

(NOTE: Inventory is made as if it were done all on the same day; it must exactly match the information in the previous ending inventory, and must never be changed.)

IV. Items to be included in the SOE Program inventory

(NOTE: List items owned personally or in partnership; if owned in partnership, explain what percentage you own, and record only the value of your share.)

- A. Production agriculture livestock
- B. Production agriculture crops

EXAMPLES: Harvested stored crops, growing crops

- C. Equipment owned and used in the SOE Program

(NOTE: Do not include items of transportation, such as pickups, cars, or motorcycles, unless more than half of usage is directly related to the SOE Program.)

INFORMATION SHEET

- D. Feed, seed, fuel, fertilizers, and supplies on hand
- E. Any nontraditional farm SOE Program items
- F. Land legally owned or being purchased by student

(NOTE: Do not inventory items or animals used for personal pleasure only: if it is likely that they will not produce income, do not inventory them.)

V. Inventory methods of valuation for assets

- A. Purchase cost — Feed, fuel, fertilizer, seed, consumable supplies on hand, and equipment purchased for less than \$100

(NOTE: Use the price at which the item was purchased on the market.)

- B. Market value — Raised market livestock; stored farm-produced crops

(NOTE: The market value is the value at the marketplace.)

- C. Production cost — Growing crops and growing horticulture plants not ready for market; purchased animals for resale

(NOTE: *Production cost* is the total cost that had already been invested up to inventory date.)

- D. Cost minus depreciation — Buildings, fences, machinery, and equipment that originally cost \$100 or more

(NOTE: Equipment that originally cost less than \$100 should be listed in inventory at purchase cost.)

VI. Units and valuations for assets in inventory

- A. Raised market livestock — Price per pound or per hundredweight

(NOTE: This valuation is to include all raised animals that are being fed out for market and will not be kept for breeding stock. For like sizes and classifications of animals, the value of an individual animal is usually figured and then multiplied by the number of head.)

EXAMPLE: Twenty market hogs averaging 200 pounds each, with a market value is \$0.40/per pound —

$$\begin{array}{rcl}
 \begin{array}{r} 200 \text{ lb hog} \\ \times .40/\text{lb} \\ \hline \$80.00/\text{head} \end{array} & \text{then} & \begin{array}{r} 80.00/\text{head} \\ \times 20 \text{ head} \\ \hline \$1600.00 \text{ total value of the 20 hogs} \end{array}
 \end{array}$$

INFORMATION SHEET

B. Harvested and stored crops

1. Small grains — Price per bushel
2. Peanuts, pecans, soybeans — Price per ton or price per pound
3. Hay — Price per ton or price per bale
4. Cotton — Price per pound

(NOTE: The price per pound valuation is for "lint" or ginned cotton, which is baled and stored in 500-pound bales; unginned cotton must be estimated.)

C. Growing assets

1. Growing crops — Production costs invested per acre
2. Growing horticultural plants not ready for market — Production costs invested per flat, pot, or individual plant
3. Purchased animals for resale — Production costs invested per individual animal

(NOTE: Items to be considered in figuring production costs invested would include applicable purchase prices, rates for tillage operations, seed, fertilizer, potting soil, flats, pots, utilities, feed, interest, veterinarian supplies or fees, hired labor, hired transportation, and cash rent.)

D. Other assets

1. Feed — Price per hundredweight or price per ton
2. Fuel — Price per gallon
3. Fertilizer — Price per ton or price per bag
4. Items of equipment purchased for less than \$100 — Price per item

(NOTE: Similar units or items can be grouped. Calculate the price of one unit and multiply by the number of total units to make one entry in the inventory.)

EXAMPLE: Ten steers of similar size and kind, averaging 400 pounds each, and worth \$0.80/pound, could be inventoried at —

10 steers avg. 400 lb. @ \$0.80/lb. = \$3200.00

INFORMATION SHEET

VII. Possible record-keeping enterprises

(NOTE: Inventory all poultry and livestock, and all feed and supplies intended or used for poultry or livestock under the appropriate enterprise headings. Inventory equipment intended or used for poultry or livestock under the appropriate enterprise heading if it is to be used only for that enterprise.)

- A. Beef
- B. Swine
- C. Sheep
- D. Poultry
- E. Dairy cattle
- F. Dairy goats
- G. Horses
- H. Crops
- I. Fruit or nut production

(NOTE: For the crop, fruit, or nut production enterprises, specify the enterprise column by the crop name.)

- J. Vegetable production
- K. Nursery production

(NOTE: Inventory all crops, either growing or harvested, that are grown for cash, pasture, hay, or silage. Inventory supplies and equipment used only for that crop enterprise.)

- L. Forestry production

(NOTE: Inventory any forestry-related products or byproducts on hand to be sold for cash. Inventory equipment and supplies used only for this enterprise.)

- M. Fish and/or wildlife

(NOTE: Specify column by enterprise name, and inventory any animals to be used for production or to be marketed for cash, other than traditional farm animals. Inventory supplies and equipment used only for this enterprise.)

INFORMATION SHEET

N. Land

(NOTE: Only inventory land owned by and deeded to the student; inventory permanent improvements to the land at the cost of the improvement; inventory permanent buildings and fences placed on the land under the land enterprise column, but set up on a depreciation schedule.)

EXAMPLES: Conservation practices, clearing, sodding, leveling

O. Equipment

(NOTE: List under the equipment column all items used by two or more enterprises.)

EXAMPLES: Hand tools, equipment, machinery

P. Agribusiness

(NOTE: Inventory any assets or items that are not under another enterprise column; inventory special items on hand that would be needed for a job-placement-type of SOE Program.)

EXAMPLE: Student-furnished mechanic's tools used on the job

VIII. Rules for listing types of breeding stock on inventory

(NOTE: Animals are referred to as *in production* or *mature* at the time female animals produce offspring, or male animals are used for breeding purposes.)

- A. Purchased as immature — On the first inventory, value at purchase price plus all production costs incurred up to the first inventory date; if not mature at next inventory date, value at previous inventory value plus production costs incurred for that year

(NOTE: Once the animal is mature or in production, the inventory value remains constant until the animal is disposed of. If desired, straight-line depreciation may be taken each year after the animal has reached mature value.)

- B. Purchased as mature — Always inventory at purchase price

(NOTE: Straight-line depreciation may be taken each year thereafter if desired.)

INFORMATION SHEET

- C. Raised breeding stock — On first inventory, value at conservative market value plus all production costs incurred up to the first inventory date; if not mature at next inventory date, value at previous inventory value plus production costs incurred for that year

(NOTE: Once the animal is mature or in production, the inventory value remains constant until the animal is disposed of. If desired, straight-line depreciation may be taken each year after the animal has reached mature value.)

IX. Steps for completing a net worth statement

(NOTE: All entries should be made as if it were the same date as the inventory.)

- A. Transfer total from inventory Total Value column to line provided
- B. Transfer total from Accounts Receivable form in the FFA *Record Book* to line provided
- C. Enter cash on hand as of date net worth statement is made
- D. Enter amount in your personal checking account as of date net worth statement is made
- E. Enter amount in your personal savings account as of date net worth statement is made
- F. Enter other personal assets and their values
- G. Total the value of all assets
- H. Enter total amount of all unpaid SOE Program bills

(NOTE: Include only those bills that pertain to the SOE Program.)

EXAMPLE: Feed bills, vet supplies and fees

- I. Transfer total from Accounts Payable form in the FFA *Record Book* to line provided
- (NOTE: These totals refer to notes and mortgages at lending institutions.)
- J. List other liabilities in the SOE Program and their descriptions
- K. Total all liabilities
- L. Compute net worth by subtracting B from A under the beginning or ending column

(NOTE: If B is larger than A, the net worth will be a negative number.)

INVENTORIES AND NET WORTH
UNIT IIASSIGNMENT SHEET #1 — CLASSIFY ASSETS ACCORDING TO
ENTERPRISE COLUMNS

NAME _____

SCORE _____

In order to set up and start the record-keeping system properly, it is important to be able to classify assets under the proper enterprise columns. Such classification ensures that all assets are in the proper place in the beginning inventory.

With this important thought in mind, classify the following assets under the proper enterprise columns on the following page by placing the number of the asset under the enterprise name on the form provided. You will need to refer to the list on the Information Sheet.

1. Three Angus cow/calf pairs; calves average two months old
2. One breeding-age Duroc boar
3. Two hundred feeder pullets
4. Two wether show lambs
5. Five hundred conventional bales of prairie hay, purchased to be fed to beef breeding stock
6. Three thousand bushels of wheat, stored in elevator, to be sold
7. One portable five-stall farrowing house; original cost \$800
8. One eleven-month-old Hereford show helper
9. Two crossbred show barrows
10. Thirty home-produced mixed barrows and gilts being fed for market and averaging 90 pounds each
11. One pig ear notcher, original cost \$6
12. Thirty mixed beef steers that you are running on your wheat pasture on cash-rented land; all cattle average 450 pounds
13. Two hundred and fifty mixed, caged laying hens and pullets
14. One beef show halter, original cost \$25
15. Ten portable steel panels used for a stud pen; original cost \$30 each
16. Forty acres of good wheat pasture that you intend to pasture until March 15, and later harvest as a cash crop

ASSIGNMENT SHEET #1

17. One \$300 spray rig, used to spray your fruit trees and do custom spraying for some neighbors
18. Fifty dwarf Burford holly shrubs, of about equal size, which will probably be sold in the next two months; you have them in your outdoor plant bed
19. One hundred young growing trees that you plan to sell next Christmas
20. Two crossbred steers to be fed out for show steers
21. Three producing Hampshire ewes
22. Ten fall-born wether lambs being fed for market
23. Twenty-five culled laying hens being fattened for market
24. Five producing dairy does
25. One four-year-old quarter horse stud that you use to breed your three mares and approximately ten outside mares a year
26. Eighty acres of cropland that you have made a down payment on; you are crop farming the land, getting some pasture benefits from it, and running stockers on it each year
27. One \$350 rotary tiller that you use only in your commercial vegetable production operation

ASSIGNMENT SHEET #1

A. Beef

B. Swine

C. Sheep

D. Poultry

E. Dairy cattle

F. Dairy goats

G. Horses

H. Crops

I. Fruit or nut production

J. Vegetable production

K. Nursery production

L. Forestry production

M. Fish and/or wildlife

N. Land

O. Equipment

P. Agribusiness

INVENTORIES AND NET WORTH UNIT II

ASSIGNMENT SHEET #2 — PREPARE A SAMPLE BEGINNING INVENTORY

NAME _____

SCORE _____

Preparing a sample beginning inventory is good practice for the preparation of your actual beginning inventory in your FFA *Record Book*.

Study the example on the next page, and then use the information below to complete the sample beginning inventory form on the following page.

A. Study the list of sample assets below.

Assets or inventory items as of September 1

- Two crossbred show barrows that you bought last spring for \$65 each; your other costs invested up to this point are \$30 each for the two pigs
- Four hundred pounds of hog feed purchased for \$13/cwt
- Four thousand bushels of wheat stored from last spring's harvest; current market value is \$4.60/bu
- Ten portable panels that originally cost \$400; depreciated value at the time of this inventory is \$300; these panels are sometimes used with both the beef and swine enterprises
- One eight-month-old steer you have raised and plan to sell as a stocker steer; the steer weighs 625 lb and current market value is 86¢/lb
- Sixty bales of hay that you purchased for \$3.00/bale to be fed to your cow this winter
- One 2 1/2-year-old Hereford cow that you bought last winter; inventory at \$500 purchase cost, plus production costs, up to inventory time, of \$90
- Forty acres of cropland deeded to you and given to you by your grandfather last year; the appraised value of the land at inventory time is \$700/acre

- B. Identify column headings needed, using Information Sheet, Section VII if necessary.
- C. Label enterprise columns needed.
- D. Post inventory items with their values.

(NOTE: Post item value under column titled Total Value and then post under the appropriate enterprise column, using the same horizontal line for both values.)

- E. Total all columns at bottom.

ASSIGNMENT SHEET #2

EXAMPLE:

BEGINNING INVENTORY

January 1, 19 84

Item or Description	Total Value	Value to the Enterprise					
		1 SWINE	2 CEEF	3 WHEAT	4 LAND	5 EQUIP.	6 Agribusiness
2 reg. Hamp Gilts, 175 lbs							
\$92 invested in each	184.00	184.00					
1 Simmental cow (purchased as cow/calf pair)	600.00		600.00				
1 Simmental calf (4 months old and will be a show steer) Production costs invested =	246.00		246.00				
Plan to work ground and plant wheat later	-			-			
20 acres of farm land to plant wheat crop on	4,000.00				4,000.00		
1 portable, A-frame hog house (purchased July 1 for \$500) See depreciation schedule.	485.00	485.00					
200 # of hog feed @ \$12.00	24.00	24.00					
Swine show equipment	12.00	12.00					
Beef show equipment (halter, brush, comb)	42.00		42.00				
Beginning Inventory Totals	15,271.00	707.00	888.00		4,000.00		

INVENTORIES AND NET WORTH

UNIT II

ASSIGNMENT SHEET #3 — PREPARE A PERSONAL BEGINNING INVENTORY

NAME _____ SCORE 10

It is important to prepare an accurate beginning inventory in order to get your record-keeping system off to a good start.

To complete a personal beginning inventory for your SOE Program, it is necessary to (1) list your inventory items, (2) identify your enterprise column names, and (3) prepare your beginning inventory.

(NOTE: If you are a first-year vocational agriculture student preparing your first beginning inventory, use September 1 as your beginning inventory date.)

PART I

The first step in preparing your beginning inventory is to make a detailed list of inventory items for your SOE Program in the space below.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or printed text on the paper. A small, faint mark resembling a stylized 'e' or a smudge is visible near the top center of the page.

ASSIGNMENT SHEET #3

PART II

The second step is to make a key of your enterprise column names for your record-keeping system. Use the form below to list your enterprise names and to make the numbered column assignments.

(NOTE: After completing the form and getting teacher approval, transfer this information to your FFA *Record Book*. Make all entries in the FFA *Record Book* in pencil.)

KEY TO ENTERPRISES FOR WHICH RECORDS ARE TO BE KEPT

Enterprises	Column No. on pages
	1
	2
	3
	4
	5
Agribusiness	6

(NOTE: The enterprise names and corresponding column numbers as assigned here are to stay the same throughout the record-keeping system.)

**INVENTORIES AND NET WORTH
UNIT II****ASSIGNMENT SHEET #4 — PREPARE A SAMPLE NET WORTH STATEMENT**

NAME _____

SCORE _____

In order to complete your first and remaining net worth statements properly, it is important to practice the steps for completing a sample net worth statement.

Study the example statement on the next page, and then use the information provided below to complete a sample net worth statement.

Information for Sample Beginning Net Worth Statement

- Beginning inventory value — \$3,104
- Accounts receivable — None
- Cash on hand — \$7.84
- Checking account balance — \$94.33 at First State Bank
- Savings account balance — \$311.14 at First State Bank
- Other assets — An \$85 rifle and a \$70 ten-speed bicycle
- Unpaid bill for services — \$62 at local vet clinic
- Account payable on a note at the bank — \$364 from buying two sows
- No other liabilities

ASSIGNMENT SHEET #4

STUDENT'S NET WORTH STATEMENT (BALANCE SHEET)

(NOTE: This net worth statement is actually a condensed version. An actual balance sheet includes much more detail. Lenders may require an actual balance sheet.)

EXAMPLE:

A. Student's Assets		Beginning Date <u>9-1-91</u>	Ending Date _____
1.	Total inventory value (from pages 8 and 9) _____	\$ <u>12,585.00</u>	\$ _____
2.	Accounts receivable (from page 20) _____	\$ <u>—</u>	\$ _____
3.	Cash money on hand _____	\$ <u>12.17</u>	\$ _____
4.	Checking account <u>(1st Nat'l Bank)</u>	\$ <u>111.06</u>	\$ _____
5.	Savings account <u>(Liberty Fed. Sav. & Loan)</u>	\$ <u>2,124.18</u>	\$ _____
6.	Other investments (cash surrender on bonds, cash surrender value of life insurance, postal savings, etc.)	\$ _____	\$ _____
	<u>12 ga. shotgun</u>	\$ <u>160.00</u>	\$ _____
	<u>1 yr. old motorcycle</u>	\$ <u>700.00</u>	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
A. TOTAL ASSETS		\$ <u>18,712.41</u>	\$ _____
B. Student's Liabilities			
1.	Unpaid bills <u>(Central Feed Store)</u>	\$ <u>47.51</u>	\$ _____
2.	Accounts payable (notes and mortgages) from page 20	\$ _____	\$ _____
	_____	\$ _____	\$ _____
3.	Other liabilities (specify) _____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
B. TOTAL LIABILITIES		\$ <u>47.51</u>	\$ _____
NET WORTH (A - B) Beginning		\$ <u>18,664.90</u>	NET WORTH (A - B) Ending
			\$ _____

(NOTE: Beginning net worth values of this book must be the same as the ending net worth values of the previous book; ending net worth values of this book must be the same as the beginning net worth values of the next book.)

ASSIGNMENT SHEET #4

STUDENT'S NET WORTH STATEMENT (BALANCE SHEET)

(NOTE: This net worth statement is actually a condensed version. An actual balance sheet includes much more detail. Lenders may require an actual balance sheet.)

A. Student's Assets		Beginning	Ending
		Date _____	Date _____
1.	Total inventory value (from pages 8 and 9) _____	\$ _____	\$ _____
2.	Accounts receivable (from page 20) _____	\$ _____	\$ _____
3.	Cash money on hand _____	\$ _____	\$ _____
4.	Checking account _____	\$ _____	\$ _____
5.	Savings account _____	\$ _____	\$ _____
6.	Other investments (cash surrender on bonds, cash surrender value of life insurance, postal savings, etc.)	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
A. TOTAL ASSETS		\$ _____	\$ _____

B. Student's Liabilities			
1.	Unpaid bills _____	\$ _____	\$ _____
2.	Accounts payable (notes and mortgages) from page 20 _____	\$ _____	\$ _____
3.	Other liabilities (specify) _____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
B. TOTAL LIABILITIES		\$ _____	\$ _____

NET WORTH (A - B) Beginning \$ _____ NET WORTH (A - B) Ending \$ _____

(NOTE: Beginning net worth values of this book must be the same as the ending net worth value of the previous book; ending net worth values of this book must be the same as the beginning net worth values of the next book.)

INVENTORIES AND NET WORTH
UNIT II

ASSIGNMENT SHEET #5 — PREPARE A PERSONAL NET WORTH STATEMENT

NAME _____

SCORE _____

Your personal net worth statement will be used as a tool to help you justify borrowing money; therefore, it is very important to complete the net worth statement neatly and accurately.

Using your personal records and those for your SOE Program, prepare the personal net worth statement on the next page. After completing the form and getting teacher approval, transfer this information to your *FFA Record Book*. Remember to make all entries in the *FFA Record Book* in pencil.

(NOTE: If you are a first-year vocational agriculture student preparing your first net worth statement, use September 1 as your beginning date.)

ASSIGNMENT SHEET #5

STUDENT'S NET WORTH STATEMENT (BALANCE SHEET)

(NOTE: This net worth statement is actually a condensed version. An actual balance sheet includes much more detail. Lenders may require an actual balance sheet.)

A. Student's Assets		Beginning	Ending
		Date _____	Date _____
1.	Total inventory value (from pages 8 and 9) _____	\$ _____	\$ _____
2.	Accounts receivable (from page 20) _____	\$ _____	\$ _____
3.	Cash money on hand _____	\$ _____	\$ _____
4.	Checking account _____	\$ _____	\$ _____
5.	Savings account _____	\$ _____	\$ _____
6.	Other investments (cash surrender on bonds, cash surrender value of life insurance, postal savings, etc.) _____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
A. TOTAL ASSETS		\$ _____	\$ _____

B. Student's Liabilities			
1.	Unpaid bills _____	\$ _____	\$ _____
2.	Accounts payable (notes and mortgages) from page 20 _____	\$ _____	\$ _____
3.	Other liabilities (specify) _____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
B. TOTAL LIABILITIES		\$ _____	\$ _____

NET WORTH (A - B) Beginning \$ _____ NET WORTH (A - B) Ending \$ _____

(NOTE: Beginning net worth values of this book must be the same as the ending net worth value of the previous book; ending net worth values of this book must be the same as the beginning net worth values of the next book.)

INVENTORIES AND NET WORTH
UNIT II

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

A.	1, 5, 8, 12, 14, 20	I.	—
B.	2, 7, 9, 10, 11	J.	27
C.	4, 21, 22	K.	18
D.	3, 13, 23	L.	19
E.	—	M.	—
F.	24	N.	26
G.	15, 25	O.	17
H.	6, 16	P.	—

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #2

BEGINNING INVENTORY

January 1, 19____

[illegible]

Assignment Sheet #3 — Evaluated to the satisfaction of the instructor

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #4

STUDENT'S NET WORTH STATEMENT (BALANCE SHEET)

A. Student's Assets

Beginning Ending
Date 9-1-81 Date _____

1.	Total inventory value (from pages 8 and 9) _____	\$ <u>3104.00</u>	\$ _____
2.	Accounts receivable (from page 20) _____	\$ <u>—</u>	\$ _____
3.	Cash money on hand _____	\$ <u>184</u>	\$ _____
4.	Checking account <u>1st STATE BANK</u>	\$ <u>94.33</u>	\$ _____
5.	Savings account _____	\$ <u>311.14</u>	\$ _____
6.	Other investments (cash surrender on bonds, cash surrender value of life insurance, postal savings, etc.)	\$ _____	\$ _____
	<u>22 rifle</u>	\$ <u>85.00</u>	\$ _____
	<u>10 speed bicycle</u>	\$ <u>20.00</u>	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	A. TOTAL ASSETS	\$ <u>3672.31</u>	\$ _____

B. Student's Liabilities

1.	Unpaid bills <u>Vet Bill</u>	\$ <u>62.00</u>	\$ _____
2.	Accounts payable (notes and mortgages) from page 20 <u>note on sows</u>	\$ <u>364.00</u>	\$ _____
3.	Other liabilities (specify) _____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	_____	\$ _____	\$ _____
	B. TOTAL LIABILITIES	\$ <u>426.00</u>	\$ _____

NET WORTH (A - B) Beginning \$ 3,246.31 NET WORTH (A - B) Ending \$ _____

Assignment Sheet #5 — Evaluated to the satisfaction of the instructor

INVENTORIES AND NET WORTH UNIT II

TEST

NAME _____

SCORE _____

1. Match to their correct definitions terms associated with inventories and net worth. Write the correct numbers in the blanks.

- | | | |
|---------|--|-------------------------|
| _____a. | Setting a value or unit price for an item or good | 1. Unit price |
| _____b. | Number of items or units | 2. Asset |
| _____c. | Itemized list of assets and their values pertaining to the SOE Program, and listed according to enterprises at the close of the record-keeping period | 3. Valuation |
| _____d. | Any item of value owned or claimed as part of the business | 4. Quantity |
| _____e. | Any fixed quantity, amount, distance, or measure used as a standard for counting or measuring items or assets | 5. Beginning inventory |
| _____f. | Itemized list of assets and their values pertaining to the Supervised Occupational Experience (SOE) Program, and listed according to enterprises at the start of the record-keeping period | 6. Scope |
| _____g. | Extent, size, or volume of the SOE Program, or an enterprise in the SOE Program | 7. Unit |
| _____h. | Monetary value assigned to individual units; used to figure overall value | 8. Ending inventory |
| _____i. | Claim against property for an amount of money owed to someone or to a business | 9. Net worth |
| _____j. | Difference between total assets and total liabilities | 10. Liabilities |
| _____k. | Financial claims against a business | 11. Lien |
| _____l. | Financial statement that lists the assets and liabilities of the business at a particular time, usually at the end of the accounting year | 12. Net worth statement |

TEST

2. State reasons for keeping inventory records.
- a. _____
 - b. _____
 - c. _____
 - d. _____
3. List dates to make beginning inventories.
- a. First beginning inventory — _____
 - b. Remaining beginning inventories — _____
4. Select from the following list items to be included in the Supervised Occupational Experience (SOE) Program inventory. Write an "X" in the blank before each correct answer.
- ____a. Production agriculture livestock
 - ____b. Rented pasture land
 - ____c. Parent's equipment used in the SOE Program
 - ____d. Roping horse used in play days only
 - ____e. Any nontraditional farm SOE Program items
 - ____f. Feed, seed, fuel, fertilizers, and supplies on hand
 - ____g. Land legally owned or being purchased by student
 - ____h. Production agriculture crops
 - ____i. Shotguns and rifles owned by student
 - ____j. Equipment owned and used in the SOE Program

TEST

5. Match inventory methods of valuation to their correct assets. Write the correct numbers in the blanks.

_____a.	Raised market livestock; stored farm-produced crops	1. Cost minus depreciation
_____b.	Growing crops and growing horticulture plants not ready for market; purchased animals for resale	2. Purchase cost
_____c.	Feed, fuel, fertilizer, seed, consumable supplies on hand, and equipment purchased for less than \$100	3. Market value
_____d.	Buildings, fences, machinery, and equipment that originally cost \$100 or more	4. Production cost

6. Match assets to their correct inventory units and valuations. Write the correct numbers in the blanks.

_____a.	Price per bushel	1. Fuel
_____b.	Price per ton or price per bale	2. Hay
_____c.	Price per ton or price per pound	3. Growing horticultural plants not ready for market
_____d.	Production costs invested per acre	4. Raised market livestock
_____e.	Price per gallon	5. Peanuts, pecans, soybeans
_____f.	Price per pound or per hundredweight	6. Growing crops
_____g.	Production costs invested per flat, pot, or individual plant	7. Purchased animals for resale
_____h.	Production costs invested per individual animal	8. Small grains
_____i.	Price per item	9. Cotton
_____j.	Price per ton or price per bag	10. Fertilizer
_____k.	Price per hundredweight or price per ton	11. Items of equipment purchased for less than \$100
_____l.	Price per pound	12. Feed

TEST

7. List ten possible record-keeping enterprises.

a. _____	f. _____
b. _____	g. _____
c. _____	h. _____
d. _____	i. _____
e. _____	j. _____

8. Match types of breeding stock to the correct rules for listing them on inventory. Write the correct numbers in the blanks.

_____a.	Always inventory at purchase price	1. Purchased as immature
_____b.	On the first inventory, value at purchase price plus all production costs incurred up to the first inventory date; if not mature at next inventory date, value at previous inventory value plus production costs incurred for that year	2. Purchased as mature
_____c.	On first inventory, value at conservative market value plus all production costs incurred up to the first inventory date; if not mature at next inventory date, value at previous inventory value plus production costs incurred for that year	3. Raised breeding stock

9. Arrange in order the steps for completing a net worth statement. Write a "1" before the first step, a "2" before the second step, and so on.

_____a.	Enter total amount of all unpaid SOE Program bills
_____b.	Enter amount in your personal checking account as of date net worth statement is made
_____c.	Transfer total from Accounts Payable form in the FFA <i>Record Book</i> to line provided
_____d.	List other liabilities in the SOE Program and their description
_____e.	Transfer total from inventory Total Value column to line provided
_____f.	Enter other personal assets and their values

TEST

- ____g. Total the value of all assets
- ____h. Compute net worth by subtracting B from A under the beginning or ending column
- ____i. Total all liabilities
- ____j. Enter cash on hand as of the date net worth statement is made
- ____k. Enter amount in your personal savings account as of date net worth statement is made
- ____l. Transfer total from Accounts Receivable form in the *FFA Record Book* to line provided

(NOTE: Test questions 10-14 list the assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

- 10. Classify assets according to enterprise columns.
- 11. Prepare a sample beginning inventory.
- 12. Prepare a personal beginning inventory.
- 13. Prepare a sample net worth statement.
- 14. Prepare a personal net worth statement.

INVENTORIES AND NET WORTH UNIT II

ANSWERS TO TEST

- | | | | | | | |
|----|----|---|----|---|----|----|
| 1. | a. | 3 | e. | 7 | i. | 11 |
| | b. | 4 | f. | 5 | j. | 9 |
| | c. | 8 | g. | 6 | k. | 10 |
| | d. | 2 | h. | 1 | l. | 12 |

2. a. To provide an overall view of the SOE program
 b. To show growth or decline of the SOE program
 c. To provide a good management tool
 d. To obtain credit or loans

3. a. Soon after entering vocational-agriculture program; usually September 1
 b. January 1 of each year

4. a, e, f, g, h, j

- | | | | | |
|----|----|---|----|---|
| 5. | a. | 3 | c. | 2 |
| | b. | 4 | d. | 1 |

- | | | | | | | |
|----|----|---|----|---|----|----|
| 6. | a. | 8 | e. | 1 | i. | 11 |
| | b. | 2 | f. | 4 | j. | 10 |
| | c. | 5 | g. | 3 | k. | 12 |
| | d. | 6 | h. | 7 | l. | 9 |

7. Answer should include any ten of the following
- a. Beef
- b. Swine

ANSWERS TO TEST

- c. Sheep
- d. Poultry
- e. Dairy cattle
- f. Dairy goats
- g. Horses
- h. Crops
- i. Fruit or nut production
- j. Vegetable production
- k. Nursery production
- l. Forestry production
- m. Fish and/or wildlife
- n. Land
- o. Equipment
- p. Agribusiness

- | | | | | |
|----|----|----|----|----|
| 8. | a. | 2 | c. | 3 |
| | b. | 1 | | |
| 9. | a. | 8 | g. | 7 |
| | b. | 4 | h. | 12 |
| | c. | 9 | i. | 11 |
| | d. | 10 | j. | 3 |
| | k. | 1 | l. | 5 |
| | f. | 6 | e. | 2 |

ANSWERS TO TEST

10. Evaluated to the satisfaction of the instructor
11. Evaluated to the satisfaction of the instructor
12. Evaluated to the satisfaction of the instructor
13. Evaluated to the satisfaction of the instructor
14. Evaluated to the satisfaction of the instructor

RECORD-KEEPING TRANSACTIONS UNIT III

UNIT OBJECTIVE

After completing this unit, the student should be able to post entries properly in the *Supervised Occupational Experience Program Record Book* (FFA *Record Book*) as required in the daily record-keeping procedures. The student will show this knowledge by completing the assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with record-keeping transactions.
2. Select from a list correct times to post transactions.
3. Select from a list reasons for exchange labor transactions.
4. Select from a list reasons for enterprise transfers.
5. Arrange in order the steps for posting an exchange labor transaction.
6. Arrange in order the steps for posting an enterprise transfer.
7. Select from a list rules for keeping records of land.
8. State rules for recording in the FFA *Record Book* gifts to the Supervised Occupational Experience Program.
9. Select from a list rules for keeping records of equipment use.
10. Post FFA *Record Book* transactions.
11. Post enterprise transfer transactions.

RECORD-KEEPING TRANSACTIONS
UNIT III

SUGGESTED ACTIVITIES

- I. Unit contents
 - A. Objective sheet
 - B. Suggested activities
 - C. Transparency master: TM #1 — Sample Postings
 - D. Information sheet
 - E. Assignment sheets
 - 1. Assignment Sheet #1 — Post FFA *Record Book* Transactions
 - 2. Assignment Sheet #2 — Post Enterprise Transfer Transactions
 - F. Answers to assignment sheets
 - G. Test
 - H. Answers to test
- II. Instructor's guide
 - A. Make sure that all students have personal copies of the FFA *Record Book*.

(NOTE: FFA *Record Books* are available from the Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)
 - B. Make transparencies of selected pages of the FFA *Record Book* to demonstrate posting procedures.
 - C. Introduce unit by explaining that posting records properly is a key element in any successful FFA member's career or in any business.

SUGGESTIONS:

 - Study and relate to students the recommendations prescribed by the National FFA office in *Agricultural Educational Magazine*, January, 1984, issue.
 - Stress to students that a regularly scheduled update or records maintenance is vitally important in order to keep records current.
 - D. Provide students with objective sheet. Discuss unit and specific objectives.
 - E. Provide students with information and assignment sheets.

SUGGESTED ACTIVITIES

F. Discuss information and assignment sheets.

1. Use Information Sheet, Section I to discuss terms and definitions associated with record-keeping transactions.

SUGGESTIONS:

- Show examples as applicable from record books of more experienced or former FFA members.
- Thoroughly discuss and explain enterprise transfer and exchange labor terms, especially for students who may have these types of transactions in their record-keeping systems.
- Work additional examples of enterprise transfer and exchange labor transactions on the chalkboard.

2. Discuss Information Sheet, Section II. Remind students of the importance of posting and how critical it is to post records at the correct times.

SUGGESTIONS:

- Explain that regular class time will be used for posting records, and tell when.

EXAMPLE: The beginning of each class period on Mondays.

- Show students how to tape or staple a large envelope inside the back cover of the *FFA Record Book* to prevent losing receipts and other papers before posting.

3. Discuss reasons for using enterprise transfers and exchange labor transactions. Use Sections III and IV of the Information Sheet.

SUGGESTION:

- Discuss instances in which students have used or will use enterprise transfers or exchange labor transactions.

4. Use Information Sheet, Section V and Transparency #1 to introduce procedure for posting exchange labor transactions. Have students complete Assignment Sheet #1.

SUGGESTIONS:

- Use transparencies of forms in *FFA Record Book* or use Assignment Sheet #1 to demonstrate steps in posting exchange labor transactions.
- List on chalkboard a variety of situations in which students will probably use exchange labor transactions in their record-keeping systems.

SUGGESTED ACTIVITIES

5. Introduce procedure used to post enterprise transfers, using Information Sheet, Section VI. Have students complete Assignment Sheet #2.

SUGGESTIONS:

- Use transparencies of forms in *FFA Record Book* or use Assignment Sheet #2 to demonstrate steps in posting enterprise transfers.
 - List on chalkboard a variety of situations in which students will probably use enterprise transfers in their record-keeping systems.
6. Discuss rules for keeping records of land. Use Section VII of the Information Sheet.

SUGGESTIONS:

- Emphasize to students the importance of being realistic when establishing land values.
 - Invite an appraiser or auctioneer to speak to the class about how land values are determined.
 - Stress to the students the importance of not creating "paper profits" by simply appreciating the value of land.
7. Use Information Sheet, Section VIII to discuss rules for recording in *FFA Record Book* gifts to the Supervised Occupational Experience Program.

SUGGESTION:

- Point out the importance of properly recording gifts as a noncash expense.
8. Discuss rules for keeping records of equipment use. Use Information Sheet, Section IX.

SUGGESTION:

- Point out that equipment will continue to show as an expense if records are not kept as suggested in this section of the information sheet.

G. Give test.

III. Unit references

- A. *Future Farmers of America Supervised Occupational Experience Program Record Book*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1984.
- B. Nelson, Ted R., and Darrel D. Kletke. *Oklahoma Farm and Ranch Custom Rates, 1979-1980*. OSU Extension Facts, No. 140. Stillwater, Oklahoma: Oklahoma State University, March, 1980.

Sample Postings

Correct

SALES AND OTHER INCOME

Date	Item of Sale and Description	Total Sale or Income
6-12	Mow and Trim Mr. Green's yard	20 00
10-20	12 crossbred steers - avg. wt. 500 lbs. @ 70¢ per hundred weight	4368 00
11-30	Exchange labor income for pasture rent from parents	10 00
12-2	400 bu. wheat @ 4.42/bu.	1768 00

Incorrect

SALES AND OTHER INCOME

Date	Item of Sale and Description	Total Sale or Income
6-12	mowed lawn	20 00
10-20	SOLD crossbred steers	4368 00
11-30	MONEY FROM DAD & MOM	10 00
12-2	WHEAT SOLD	1768 00

RECORD-KEEPING TRANSACTIONS
UNIT III

INFORMATION SHEET

I. Terms and definitions

- A. Post — To make an entry in the FFA *Record Book* on the Sales and Other Income page or the Expenses page
- B. Credit — Addition to an enterprise column on the Sales and Other Income page that increases the value of that enterprise column
- C. Debit — Entry in the FFA *Record Book* Expenses page to a particular enterprise column that increases the expenses to that enterprise
- D. Expense — Cost or cash outlay to a particular enterprise
- E. Sales and other income — Transactions that produce cash receipts from enterprises
- F. Accounts receivable — Money to be collected from businesses or individuals to whom products or services were sold
- G. Accounts payable — Money that an individual or a business owes for goods or services purchased
- H. Enterprise transfer — Change of assets from one enterprise to another

(NOTE: Often it is necessary to transfer assets from one account to another. The purpose of such a transfer is to show a credit to an enterprise for items transferred that may not actually produce a cash sale.)

EXAMPLE: You have bought a ton of corn to feed to your swine enterprise, and have shown it as an expense to swine; a few weeks later, you decide to feed 500 pounds of it to your beef enterprise. You would then determine the value per hundredweight and show a sale for the swine enterprise and an equal expense for the beef enterprise.

- I. Exchange labor — Labor traded for equal values of feed, facilities, equipment usage, or other products or services

EXAMPLE: The student may winter feed parents' beef cows in exchange for feed for own beef cows.

(NOTE: Exchange labor circumstances should be written into the agreement in the front of the FFA *Record Book*, but postings should be made as though the cash transactions took place.)

INFORMATION SHEET

II. Correct times to post transactions

- A. Each time a single expense occurs
- B. Each time a sale or income occurs
- C. When an enterprise is transferred
- D. When a phase of expenses occurs for a particular enterprise

(NOTE: Expenses would be posted to a particular crop enterprise when that phase of the operation is complete.)

EXAMPLES: Plowing, purchasing seed, purchasing fertilizer, planting, topdressing, spraying, harvesting

If tractors or equipment belonging to parents is used, the fair custom-rate amount should be posted to expenses for that crop enterprise and an equal amount posted to the Agribusiness column on the Sales and Other Income page.

- E. Weekly or monthly when exchange labor transaction expenses and income occur
- F. When interest payments that have not previously been charged as expenses are made
- G. When gifts are received and posted as an expense

(NOTE: The expense should be the market value or appraised value.)

III. Reasons for exchange labor transactions

- A. Goods or services used in student's enterprises are difficult to separate from those used in parents' or other party's enterprises
- B. Instead of hiring labor, exchange labor agreement is made between student and parents or other party
- C. Student can provide time for labor, but is not able to purchase goods, services, or equipment use
- D. Goods, services, or equipment use is not available for purchase or for hire

INFORMATION SHEET

IV. Reasons for enterprise transfers

- A. Showing proper credit to an enterprise that otherwise may not have an actual sale or income

EXAMPLE: You decide to feed some wheat or another harvested crop that you have grown and have in storage to your swine enterprise instead of selling it for a cash sale. You determine the market value of the crop and show an income to that crop enterprise for the amount to be fed. You show an equal value as a feed expense to the swine enterprise.

- B. Analyzing enterprise and making decisions

- C. Showing records of individual enterprises

V. Steps for posting an exchange labor transaction

(NOTE: The value and amount of the labor, and the value and amount of the units being exchanged, should be determined before posting the transaction. The period of time involved should also be predetermined. Be sure to use realistic and customary values.)

- A. Compute dollar value of products or services received for time period involved
- B. Charge total amount to the appropriate enterprise on Expenses page
- C. Credit total amount to Agribusiness enterprise column on Sales and Other Income page

VI. Steps for posting an enterprise transfer

- A. Determine enterprise you want to transfer
- B. Determine enterprise you want to transfer to
- C. Determine description and value
- D. Credit amount to appropriate enterprise column on Sales and Other Income page
- E. Charge amount to appropriate enterprise column on Expenses page

(NOTE: The recorded values of the credits and charges must be the same.)

INFORMATION SHEET

VII. Rules for keeping records of land

A. Land owned

(NOTE: *Land owned* is defined as "land which is deeded or under contract for deed to the student.")

1. Inventory at fair market or appraised value land owned prior to entering vocational agriculture program
2. Enter land obtained after first inventory on Expenses page under land column at actual cost or appraised value
3. Rent the land to the enterprise using it

EXAMPLES: If it is cropland, show an income in land column at a fair rent price, and charge the same amount as an expense to the crop; if it is pastureland, show an income in land column at a fair pasture rent price, and show a pasture rent expense to the livestock enterprise using the land.

4. Always keep inventory value the same

B. Land rented for cash

1. Never put on inventory
2. Show as a cash expense to enterprise using the land

(NOTE: If the land is being used by more than one enterprise, or only for part of the year, then the expense should be prorated.)

3. Never have a land enterprise column for land you rent from someone

C. Crop-share rented land

1. Never put on inventory
2. Never have a land enterprise column for crop-share rented land
3. Show only student's share of expenses, and post in crop enterprise column on Expenses page
4. Show only student's share of income, and post in crop enterprise column on Sales and Other Income page

VIII. Rules for recording in the FFA Record Book gifts to the Supervised Occupational Experience Program

- A. Record as an expense at fair-market or appraised value

- B. Record assets that have a title, deed, or registration paper in the student's name

(NOTE: The expense of the asset will be offset by the fact that the item will show up on the next inventory.)

IX. Rules for keeping records of equipment use

- A. Record depreciable machinery and equipment under a separate column if item might be used by more than one enterprise
- B. Rent equipment at a fair custom rate to the enterprise using it

(NOTE: Show an income to the equipment enterprise, and an expense to the enterprise using the equipment.)

EXAMPLE: If your tractor is being used to work your wheat ground, then show an income to the equipment enterprise at a fair custom rate, and an equal expense to the wheat enterprise.

RECORD-KEEPING TRANSACTIONS
UNIT IIIASSIGNMENT SHEET #1 — POST FFA *RECORD BOOK* TRANSACTIONS

NAME _____ SCORE _____

(NOTE: Because of fluctuating farm prices and values, some of the following values in the examples and situations may seem outdated.)

Posting FFA *Record Book* transactions is a necessary part of regular FFA *Record Book* maintenance. To complete this assignment sheet, study the sample situations and example postings of these situations, and then post the next set of situations on the appropriate forms provided.

(NOTE: Make all entries in the FFA *Record Book* in pencil.)

PART I — Sample Situations

- Sept. 12 Purchased 200 pounds of feed for the Hamp gilts @ \$13/cwt
- Sept. 15 Purchased 30 bushels of seed wheat @ \$5.15/bu for wheat enterprise on owned farm land
- Sept. 16 Paid State Fair entry fees on two gilts @ \$4/head
- Sept. 20 Received payment from neighboring farmer for driving tractor ten hours @ \$4/hr
- Sept. 22 Sold 400 bushels of wheat from last spring's wheat harvest @ \$4.42/bu
- Sept. 22 Purchased 2 tons of fertilizer for wheat crop @ \$130/ton
- Sept. 27 Posted exchange labor of \$152.80 for disking and planting wheat, using parents' equipment, in exchange for thirty-eight hours of labor helping plant parents' wheat crop
- Sept. 30 Posted exchange labor of \$10 for September pasture rent for cow and calf in exchange for helping pour parents' catt'e for grubs for two and one-half hours

ASSIGNMENT SHEET #1

EXAMPLES:

SALES AND OTHER INCOME

Date	Item of Sale and Description	Total Sale or Income	Charge to Enterprise					
			1 SWINE	2 CEEF	3 WHEAT	4 LAND	5 EQUIP.	6 Agribusiness
9/20	10 Hours Tractor driving for Mr. Smith	40.00						40.00
9/22	400 bu. wheat @ 4.18/bu.	1768.00			1768.00			
9/27	Exchange labor for helping plant parents' wheat							
	Equipment use (38 hrs)	152.80						152.80
9/30	Exchange labor income for pasture rent	10.00						10.00

EXPENSES

Date	Item of Expense and Description	Total Expense	Charge to Enterprise					
			1 SWINE	2 CEEF	3 WHEAT	4 LAND	5 EQUIP.	6 Agribusiness
9/12	200# hog feed	26.00	26.00					
9/15	30 bu. seed wheat @ 5.15/bu.	154.50			154.50			
9/16	Entry fee for gilts	8.00	8.00					
9/22	2 tons of 10-20-10 @ \$120/T for wheat	240.00			240.00			
9/27	Exchange labor for plowing and planting wheat with Dad's equipment	152.80			152.80			
9/30	Exchange labor for Pasture Rent	10.00		10.00				

ASSIGNMENT SHEET #1

PART II — Sample Situations

- Oct. 7 Received \$12 prize money on one of the Hamp gilts for placing first at State Fair
- Oct. 7 Received \$2 prize money on the other Hamp gilt for placing seventh at State Fair
- Oct. 10 Purchased 200 pounds hog feed @ \$13.10/cwt
- Oct. 11 Paid breeding fee for two gilts @ \$50 each
- Oct. 24 Sold one bred Hamp gilt at All-Breed Sale for \$185
- Oct. 27 Purchased one Hamp and one cross barrow for \$75 each to show next spring
- Oct. 31 Posted exchange labor of \$10 for October pasture rent for cow and calf in exchange for helping with parents' cattle

EXHIBITION RECORD

Record all exhibits; transfer prizes won to Sales and Other Income page, and enter for the proper enterprise at the end of the year.

Date	Kind of Exhibit	Where Exhibited	Placings	Prize Won

RECORD-KEEPING TRANSACTIONS UNIT III

ASSIGNMENT SHEET #2 — POST ENTERPRISE TRANSFER TRANSACTIONS

NAME _____ SCORE _____

Posting enterprise transfers is necessary in many FFA record-keeping systems.

Study the following example situation and transaction. After studying the example, post on the forms on the next page the enterprise transfer transactions for the situations given.

EXAMPLE:

Situation: You have both a swine and a beef enterprise. You recently bought 1000 pounds of corn @ \$6/cwt. You have already recorded the corn as an expense to the swine enterprise, but now you have decided to feed 500 pounds of it to one of your beef calves. You need to show an expense for the corn to the beef enterprise and an equal amount of income to the swine enterprise in order to make this enterprise transfer. The transaction date is November 11.

SALES AND OTHER INCOME

Date	Item of Sale and Description	Total Sale or Income	Charge to Enterprise					
			1 Swine	2 Beef	3 Wheat	4 Land	5 Equip.	6 Agribusiness
11/11	Transfer 500# corn							
	from swine to beef							
	@ \$6.00/cwt.	3000	3000					

EXPENSES

Date	Item of Expense and Description	Total Expense	Charge to Enterprise					
			1 SWINE	2 BEEF	3 WHEAT	4 LAND	5 EQUIP.	6 Agribusiness
11/11	Transfer 500# corn							
	from swine to beef							
	@ \$6.00/cwt.	3000		3000				

RECORD-KEEPING TRANSACTIONS UNIT III

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

EXHIBITION RECORD

Record all exhibits, transfer prizes won to Sales and Other Income page and enter for the proper enterprise at the end of the year.

Date	Kind of Exhibit	Where Exhibited	Placings	Prize Won
10/7	Hamp gilt	State Fair	1st	12.00
10/7	Hamp gilt	State Fair	7th	2.00

SALES AND OTHER INCOME

Date	Item of Sale and Description	Total Sale or Income	Charge to Enterprise					
			1 SWINE	2 BEEF	3 WHEAT	4 LAND	5 EQUIP.	6 Agribusiness
10/24	1 Bred Hamp gilt	185.00	185.00					
10/31	Exchange labor for pasture rent for cow & calf	10.00						10.00

EXPENSES

Date	Item of Expense and Description	Total Expense	Charge to Enterprise					
			1 SWINE	2 BEEF	3 WHEAT	4 LAND	5 EQUIP.	6 Agribusiness
10/10	200# hog feed @ 13.10/cwt	2620	2620					
10/11	Breeding fee for 2 gilts @ \$50.00 each	100.00	100.00					
10/27	1 Hamp barrow	75.00	75.00					
10/27	1 Cross barrow	75.00	75.00					
10/31	Exchange labor for pasture rent for cow/calf for Oct.	10.00		10.00				

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #2

SALES AND OTHER INCOME

Date	Item of Sale and Description	Total Sale or Income	Charge to Enterprise					
			1 SLOVE	2 BEEF	3 WHEAT	4 LAND	5 EQUIP.	6 Agribusiness
11/30	Grazing 20 acres of wheat pasture by 10-400 ⁺ steers @ \$2.00/mo per month for month of Nov.	80.00			80.00			

EXPENSES

Date	Item of Expense and Description	Total Expense	Charge to Enterprise					
			1 SWINE	2 BEEF	3 WHEAT	4 LAND	5 EQUIP	6 Agribusiness
11/30	Grazing 20 acres of wheat pasture by 10-400# steers @ 2¢ per month for the month of Nov.	80.00		80.00				

RECORD-KEEPING TRANSACTIONS UNIT III

TEST

NAME _____

SCORE _____

1. Match to their correct definitions terms associated with record-keeping transactions. Write the correct numbers in the blanks.

- | | | |
|---------|--|---------------------------|
| _____a. | Addition to an enterprise column on the Sales and Other Income page that increases the value of that enterprise column | 1. Post |
| _____b. | Money to be collected from businesses or individuals to whom products or services were sold | 2. Credit |
| _____c. | To make an entry in the FFA <i>Record Book</i> on the Sales and Other Income page or the Expenses page | 3. Debit |
| _____d. | Labor traded for equal values of feed, facilities, equipment usage, or other products or services | 4. Expense |
| _____e. | Change of assets from one enterprise to another | 5. Sales and other income |
| _____f. | Entry in the FFA <i>Record Book</i> Expenses page to a particular enterprise column that increases the expenses to that enterprise | 6. Accounts receivable |
| _____g. | Money that an individual or a business owes for goods or services purchased | 7. Accounts payable |
| _____h. | Cost or cash outlay to a particular enterprise | 8. Enterprise transfer |
| _____i. | Transactions that produce cash receipts from enterprises | 9. Exchange labor |

TEST

2. Select from the following list correct times to post transactions. Write an "X" in the blank before each correct answer.

- ____a. Weekly or monthly when exchange labor transaction expenses and income occur
- ____b. At the start of each nine weeks of school
- ____c. Each time a sale or income occurs
- ____d. At the beginning of school each fall only
- ____e. Each time a single expense occurs
- ____f. When gifts are received and posted as an expense
- ____g. When interest payments that have not previously been charged as expenses are made
- ____h. When an expense is transferred
- ____i. When a phase of expenses occurs for a particular enterprise

3. Select from the following list reasons for exchange labor transactions. Write an "X" in the blank before each correct answer.

- ____a. Student's Supervised Occupational Experience Program records need to look better
- ____b. Goods or services used in student's enterprises are difficult to separate from those used in parents' or other party's enterprises
- ____c. Instead of hiring labor, exchange labor agreement is made between student and parents or other party
- ____d. After-school and weekend jobs are provided
- ____e. Student can provide time for labor, but is not able to purchase goods, services, or equipment use
- ____f. Goods, services, or equipment use is not available for purchase or for hire
- ____g. Experience is provided in types of work, other than that in student's own Supervised Occupational Experience Program

TEST

4. Select from the following list reasons for enterprise transfers. Write an "X" in the blank before each correct answer.
- _____a. Showing records of individual enterprises
 - _____b. Showing unrealistic profits
 - _____c. Showing proper credit to an enterprise that otherwise may not have an actual sale or income
 - _____d. Analyzing enterprise and making decisions
 - _____e. Using more enterprise columns to make Supervised Occupational Experience Program look better financially
5. Arrange in order the steps for posting an exchange labor transaction. Write a "1" before the first step, a "2" before the second step, and so on.
- _____a. Charge total amount to the appropriate enterprise on Expenses page
 - _____b. Credit total amount to Agribusiness enterprise column on Sales and Other Income page
 - _____c. Compute dollar value of products or services received for time period involved
6. Arrange in order the steps for posting an enterprise transfer. Write a "1" before the first step, a "2" before the second step, and so on.
- _____a. Determine description and value
 - _____b. Charge amount to appropriate enterprise column on Expenses page
 - _____c. Determine enterprise you want to transfer
 - _____d. Credit amount to appropriate enterprise column on Sales and Other Income page
 - _____e. Determine enterprise you want to transfer to
7. Select from the following list rules for keeping records of land. Write an "X" in the blank before each correct answer.
- a. Land owned
- _____1) Raise land value on each beginning inventory
 - _____2) Inventory at fair market or appraised value land owned prior to entering vocational agriculture program
 - _____3) Rent the land to the enterprise using it
 - _____4) Inventory all land that you are helping to farm
 - _____5) Always keep inventory value the same
 - _____6) Enter land obtained after first inventory on expense page under land column at actual cost or appraised value

TEST

b. Land rented for cash

- _____ 1) Put on first beginning inventory only
- _____ 2) Never have a land enterprise column for land you rent *from* someone
- _____ 3) Show as a cash expense to enterprise using the land
- _____ 4) Show expenses on parents' or other party's cash-rented land that you are helping to care for
- _____ 5) Enter cash-rented price for land on Sales and Other Income page under land enterprise
- _____ 6) Never put on inventory

c. Crop-share rented land

- _____ 1) Never put on inventory
- _____ 2) Show only student's share of expenses, and post in crop enterprise column on Expenses page
- _____ 3) Always have a land enterprise column for crop-share rented land
- _____ 4) Show only student's share of income, and post in crop enterprise column on Sales and Other Income page
- _____ 5) Never have a land enterprise column for crop-share rented land
- _____ 6) Combine the value of land with the value of the crop

8. State the rules for recording in the FFA *Record Book* gifts to the Supervised Occupational Experience Program.

- a. _____

- b. _____

TEST

9. Select from the following list rules for keeping records of equipment use. Write an "X" in the blank before each correct answer.

- ____ a. Record total value of equipment each time it is used
- ____ b. Record depreciable machinery and equipment under a separate column if item might be used by more than one enterprise
- ____ c. Keep all equipment under same enterprise column and never record full value
- ____ d. Rent equipment at a fair custom rate to enterprise using it

(NOTE: Test questions 10 and 11 list the assignment sheets. They are an important part of this test. If they have not been completed, see your instructor.)

- 10. Post FFA *Record Book* transactions.
- 11. Post enterprise transfer transactions.

RECORD-KEEPING TRANSACTIONS
UNIT III

ANSWERS TO TEST

- | | | | | | | |
|----|----|---|----|---|----|---|
| 1. | a. | 2 | d. | 9 | g. | 7 |
| | b. | 6 | e. | 8 | h. | 4 |
| | c. | 1 | f. | 3 | i. | 5 |
2. a, c, e, f, g, h, i
3. b, c, e, f
4. a, c, d
5. a. 2
b. 3
c. 1
- | | | | | |
|----|----|---|----|---|
| 6. | a. | 3 | d. | 4 |
| | b. | 5 | e. | 2 |
| | c. | 1 | | |
7. a. 2, 3, 5, 6
b. 2, 3, 6
c. 1, 2, 4, 5
8. a. Record as an expense at fair-market or appraised value
b. Record assets that have a title, deed, or registration paper in the student's name
9. b, d
10. Evaluated to the satisfaction of the instructor
11. Evaluated to the satisfaction of the instructor

**DEPRECIATION
UNIT IV****UNIT OBJECTIVE**

After completing this unit, the student should be able to compute depreciation. The student will show this knowledge by completing the assignment sheet and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with depreciation.
2. Select from a list reasons for depreciating an asset.
3. List the major causes of depreciation.
4. State how to calculate straight-line depreciation.
5. State the rule for determining which assets to set up on a depreciation schedule.
6. Distinguish between depreciable and nondepreciable assets.
7. Match assets to their suggested allowed years of depreciation.
8. Arrange in order the steps for handling depreciable assets in the *FFA Record Book*.
9. Complete a depreciation schedule.

DEPRECIATION
UNIT IV

SUGGESTED ACTIVITIES

I. Unit contents

- A. Objective sheet
- B. Suggested activities
- C. Information sheet
- D. Assignment Sheet #1 — Complete a Depreciation Schedule
- E. Answers to assignment sheet
- F. Test
- G. Answers to test

II. Instructor's guide

- A. Make sure that all students have personal copies of the *FFA Record Book*.
- B. Introduce unit by showing the key role of depreciation in business operations.

SUGGESTIONS:

- Provide examples of approximate true worths of assets as they depreciate.
- Point out to students that all types of businesses, not just agricultural business, use depreciation.
- C. Provide students with objective sheet.
- D. Discuss unit and specific objectives.
- E. Provide students with information and assignment sheets.

SUGGESTED ACTIVITIES

F. Discuss information and assignment sheets.

1. Use Information Sheet, Section I to discuss terms and definitions associated with depreciation.

SUGGESTIONS:

- Discuss terms A through F in Section I. On chalkboard record items that students list as types of assets that should be depreciated in an SOE Program. Follow up listing activity by having students estimate actual cost, salvage values, and productive life figures for each asset.

EXAMPLE:	ASSET	ACTUAL COST	SALVAGE VALUE	PRODUCTIVE LIFE FIGURE
----------	-------	----------------	------------------	---------------------------

- Ask persons involved in agribusiness to point out how realistic their own estimations were, and to discuss assets that occur in business.
- Point out that terms G through J are used in the depreciation schedule in the *FFA Record Book*.

2. Use Information Sheet, Section II to discuss reasons for depreciating an asset.

SUGGESTIONS:

- Elaborate on and emphasize the notes included under each item.
- Allow and encourage students to discuss and to ask questions to ensure an understanding of the reasons for depreciating assets.

3. Use Information Sheet, Section III to discuss major causes of depreciation.

SUGGESTIONS:

- Provide examples to illustrate each major cause of depreciation; list examples on chalkboard in their correct categories.
- Ask students to discuss what they think causes assets to go down in value. Also ask how much they think assets go down in value.

SUGGESTED ACTIVITIES

4. Discuss the straight-line depreciation method, using Information Sheet, Section IV.

SUGGESTIONS:

- Demonstrate how to compute depreciation using the straight-line method.
- Have students practice computing skills at chalkboard before completing Assignment Sheet #1.

5. Discuss students' need to set up depreciation schedules. Use Sections V through VII of the Information Sheet, and Assignment Sheet #1.

SUGGESTIONS:

- Invite a tax accountant to discuss what can and cannot legally be depreciated and why.
- Allow students to ask why the listed assets are nondepreciable.
- Explain that in actuality some capital assets may appreciate in value, but that they are depreciated for tax deduction and management purposes. Further explain that sometimes for purposes of providing records to lending institutions, the appreciated value may be referred to rather than the depreciated value.

6. Discuss steps for handling assets in the FFA *Record Book*. Use Information Sheet, Section VIII.

(NOTE: First-year students may not have assets that warrant being entered in the FFA *Record Book* at this time. Discuss information with group, and handle specific needs of students on an individual basis.)

SUGGESTIONS:

- For those students with larger programs, work with the student and his or her parents to set up the appropriate assets on the depreciation schedule.
- Work closely with students (one-on-one) who may need special help with this phase of record keeping.

- G. Give test.

SUGGESTED ACTIVITIES

III. Unit references

- A. Hodgens, Jim. *Farm Business Management: Year I*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1979.
- B. Reeder, Dean. *Vocational Agriculture IV: Basic Core*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1973.

**DEPRECIATION
UNIT IV****INFORMATION SHEET****I. Terms and definitions**

- A. Depreciation — Decline in value of an asset because of wear, weather, obsolescence, or inadequacy; a method of prorating the cost of a working asset over its productive life

(NOTE: Depreciation is a noncash expense.)

- B. Depreciation schedule — Form used to illustrate and record declining values of an asset

- C. Working asset — Asset that is productive over a period longer than one year and becomes less valuable over time

- D. Productive life — Period over which an asset is expected to be valuable to the business or in the production of income

- E. Salvage value — Amount that an asset will be worth when it is no longer useful or productive

(NOTE: Salvage value should be determined when the asset is first obtained.)

- F. Cost — Purchase price of assets bought outright

(NOTE: When a like item is traded in, the cost is computed as the cash difference paid, plus the remaining value of the asset traded in.)

- G. Prior depreciation — Total value that has been taken in previous years

- H. Beginning-of-year balance — Value of an asset at the start of a calendar year of record keeping based on the depreciation taken off in previous years

- I. Depreciation this year — Predetermined amount to be depreciated from an asset during the current calendar year of record keeping

- J. Ending-of-year balance — Value of an asset at the close of a calendar year of record keeping

(NOTE: This balance is based on the total depreciation this year, plus total prior depreciation.)

INFORMATION SHEET

II. Reasons for depreciating an asset

A. Estimating the average yearly noncash expense

(NOTE: Such estimation provides an opportunity to see roughly what an item is worth each year of its useful life.)

B. Adjusting taxable income

(NOTE: Depreciation expenses allow a tax deduction, thereby releasing cash that can be used for other purposes. Since January 1, 1981, the IRS has used the Accelerated Cost Recovery System [ACRS] for calculating depreciation. Refer to the IRS *Farmer's Tax Guide* for current income tax information.)

C. Estimating current value

(NOTE: If depreciation is overstated, it appears that there is less money invested in assets than there really would be if the assets were to be sold. As a result, the business shows a deflated net worth.)

III. Major causes of depreciation

A. Wear and tear due to use

B. Obsolescence due to new technology

C. Deterioration due to elements of nature

IV. Calculating straight-line depreciation — Subtract the salvage value from the cost, and divide the difference by the productive life to find the amount depreciated each year

(NOTE: It is suggested that all depreciation done in the FFA *Record Book* be done with the straight-line method. If income tax information is needed about the ACRS, refer to the IRS *Farmer's Tax Guide*.)

EXAMPLE: A 60-bushel self-feeder for swine was purchased on January 1, 1984, for \$300; it has an estimated productive life of eight years, with an estimated salvage value of \$50. (Table 1)

$$\begin{aligned}
 \text{Annual Depreciation} &= \frac{\text{Cost} - \text{Salvage Value}}{\text{Number of Years' Productive Life}} \\
 &= \frac{300 - 50}{8} \\
 &= \$31.25
 \end{aligned}$$

INFORMATION SHEET

TABLE 1

Year	Rate or Amount Each Year	Prior Depreciation	Beginning-of-Year Balance	Depreciation This Year	Ending-of-Year Balance
1	31.25	—	300.00	31.25	268.75
2	31.25	31.25	268.75	31.25	237.50
3	31.25	62.50	237.50	31.25	206.25
4	31.25	93.75	206.25	31.25	175.00
5	31.25	125.00	175.00	31.25	143.75
6	31.25	156.25	143.75	31.25	112.50
7	31.25	187.50	112.50	31.25	81.25
8	31.25	218.75	81.25	31.25	50.00

(NOTE: If the feeder were purchased at midyear, the first year's depreciation would be $6/12 \times \$31.25$, or \$15.62. Each year thereafter the depreciation would be \$31.25, until the ninth calendar year, when it would be \$15.63, which is balance to be depreciated.)

- V. Rule for determining which assets to set up on a depreciation schedule — Set up only those assets with an expected useful life of more than one year and a cost of \$100 or more at time of purchase

VI. Depreciable and nondepreciable assets

(NOTE: All depreciable assets must have cost \$100 or more at the time of purchase.)

A. Depreciable

1. Vehicles of which more than half of mileage is used directly in the SOE Program
2. Tractors, implements, machinery, and equipment
3. Purchased or raised breeding animals (optional)
4. Fences
5. Barns and buildings
6. Water systems

INFORMATION SHEET

B. Nondepreciable

1. Personal cars, pickups, or motorcycles of which less than half of the mileage is used directly in the SOE Program
2. Land and conservation improvements to land

(NOTE: Conservation improvements to land should be entered on the Expenses page under the land enterprise at the cost of the improvement. On the next ending inventory completed after the improvement is done, write in the description of the improvement under land. This will increase the value of the land enterprise on the inventory, but only by the amount of the cost of the improvement. This is the only way land value can be increased.)

3. Items purchased for resale
4. Personal residences
5. Feed, fuel, fertilizer, and consumable supplies

VII. Suggested years of depreciation allowed for assets

- A. Tractors and implements — Eight years
- B. Vehicles — Three years
- C. Barns and buildings — Fifteen years
- D. Fences — Twenty years
- E. Breeding stock — Five years
- F. Other assets — Actual expected productive life

VIII. Steps for handling depreciable assets in the FFA Record Book

- A. On the date item is acquired, record cost of item on Expenses page under appropriate enterprise column
- B. Compute annual depreciation to be taken

(NOTE: If the item is not acquired at the beginning of the calendar year, then a partial year's depreciation will have to be computed for this first year and for the last year.)

INFORMATION SHEET

- C. Record necessary information on Depreciation Schedule in *FFA Record Book*

(NOTE: The Prior Depreciation column will be left blank for this first year's records; also, the Beginning-of-year Balance column will be left blank this first year unless the item was purchased on January 1.)

- D. Record Ending-of-Year Balance figure on ending inventory as the value of item on that date, according to the depreciation schedule

(NOTE: The value of the item at this time should be equal to the cost minus the depreciation taken this year.)

- E. Record in new book as beginning inventory value for the item the exact ending inventory value from previous book

- F. Record necessary information on Depreciation Schedule in new book

(NOTE: This time all columns should have an entry. The Prior Depreciation column should have the amount taken off in the *FFA Record Book* just completed. This column, in future books, will continue to be a total each year of the amounts taken off in previous years.)

**DEPRECIATION
UNIT IV****ASSIGNMENT SHEET #1 — COMPLETE A DEPRECIATION SCHEDULE**

NAME _____

SCORE _____

Many FFA members have, in their SOE Program, assets that need to be set up on a depreciation schedule. It is important to understand how the depreciation schedule is used and how certain information is transferred from one year to the next.

Study the example on the next page, and then complete the depreciation schedule for the sample assets on the page that follows.

ASSIGNMENT SHEET #1

EXAMPLE: *Situation:* April 1 of your ninth-grade year, you purchased a 60-bushel self-feeder for nogs. It cost \$300, will have a salvage value of \$50, and a productive life of eight years.

(NOTE: The following example shows the first partial year's depreciation and the next full year's depreciation using the straight-line method.)

Transactions: \$300 Cost
 -50 Salvage value
 \$250 Amount to be depreciated
 $\$250 \div 8 \text{ years' life} = \$31.25 \text{ Annual depreciation}$
 $\$31.25 \times 9/12 \text{ (partial first year)} = \$23.43 \text{ Depreciation}$
 for partial year

DEPRECIATION SCHEDULE (1st CALENDAR YEAR)

Item or Description	Date Acquired	1 Cost	2 Salvage Value	3 Total Amount to Be Deprec. (1-2=3)	Method	Life	Rate or Amount Each Year	Prior Deprec.	Beginning-of-Year Balance	Deprec. This Year	Ending-of-Year Balance*
60 bu. feeder	4/1/81	300.00	50.00	250.00	SL	8yrs	31.25	-	-	23.43	276.57

(NOTE: First year Ending-of-Year Balance equals Cost minus Depreciation this year)

DEPRECIATION SCHEDULE (2nd CALENDAR YEAR)

Item or Description	Date Acquired	1 Cost	2 Salvage Value	3 Total Amount to Be Deprec. (1-2=3)	Method	Life	Rate or Amount Each Year	Prior Deprec.	Beginning-of-Year Balance	Deprec. This Year	Ending-of-Year Balance*
60 bu. feeder	4/1/81	300.00	50.00	250.00	SL	8yrs	31.25	23.43	276.57	31.25	245.32

ASSIGNMENT SHEET #1

Situation: On July 1, you bought a portable farrowing house for \$2500. It will have a salvage value of \$500 after ten years of productive life. Using the straight-line method, show the entries on the depreciation schedule for the first partial year and first full year.

DEPRECIATION SCHEDULE

Item or Description	Date Acquired	1 Cost	2 Salvage Value	3 Total Amount to Be Deprec. (1 - 2 = 3)	Method	Life	Rate or Amount Each Year	Prior Deprec.	Beginning-of-Year Balance	Deprec. This Year	Ending-of-Year Balance*

DEPRECIATION SCHEDULE

Item or Description	Date Acquired	1 Cost	2 Salvage Value	3 Total Amount to Be Deprec. (1 - 2 = 3)	Method	Life	Rate or Amount Each Year	Prior Deprec.	Beginning-of-Year Balance	Deprec. This Year	Ending-of-Year Balance*

DEPRECIATION
UNIT IV

ANSWERS TO ASSIGNMENT SHEET

Assignment Sheet #1

DEPRECIATION SCHEDULE

Item or Description	Date Acquired	1 Cost	2 Salvage Value	3 Total Amount to Be Deprec. (1-2=3)	Method	Life	Rate or Amount Each Year	Prior Deprec.	Beginning of Year Balance	Deprec. This Year	Ending of Year Balance*
Portable Farrowing House	July 1	2,500.00	500.00	2,000.00	SL	10 yrs	200.00	-	-	100.00	2,400.00

DEPRECIATION SCHEDULE

Item or Description	Date Acquired	1 Cost	2 Salvage Value	3 Total Amount to Be Deprec. (1-2=3)	Method	Life	Rate or Amount Each Year	Prior Deprec.	Beginning of Year Balance	Deprec. This Year	Ending of Year Balance*
Portable Farrowing House	July 1	2,500.00	500.00	2,000.00	SL	10 yrs	200.00	100.00	2,400.00	200.00	2,200.00

DEPRECIATION UNIT IV

TEST

NAME _____

SCORE _____

1. Match to their correct definitions terms associated with depreciation. Write the correct numbers in the blanks.

- | | | |
|---------|--|------------------------------|
| _____a. | Period over which an asset is expected to be valuable to the business or in the production of income | 1. Prior depreciation |
| _____b. | Form used to illustrate and record declining values of an asset | 2. Working asset |
| _____c. | Decline in value of an asset because of wear, weather, obsolescence, or inadequacy; a method of prorating the cost of a working asset over its productive life | 3. Salvage value |
| _____d. | Value of an asset at the close of a calendar year of record keeping | 4. Beginning-of-year balance |
| _____e. | Asset that is productive over a period longer than one year and becomes less valuable over time | 5. Ending-of-year balance |
| _____f. | Purchase price of assets bought outright | 6. Depreciation |
| _____g. | Amount that an asset will be worth when it is no longer useful or productive | 7. Depreciation schedule |
| _____h. | Predetermined amount to be depreciated from an asset during the current calendar year of record keeping | 8. Depreciation this year |
| _____i. | Total value that has been taken in previous years | 9. Cost |
| _____j. | Value of an asset at the start of a calendar year of record keeping based on the depreciation taken off in previous years | 10. Productive life |

TEST

2. Select from the following list reasons for depreciating an asset. Write an "X" in the blank before each correct answer.

- ☐ a. Increasing net worth
- ☐ b. Estimating current value
- ☐ c. Making inventory look better
- ☐ d. Comparing enterprises
- ☐ e. Estimating the average yearly noncash expense
- ☐ f. Adjusting taxable income
- ☐ g. Speeding up record keeping

3. List the major causes of depreciation.

- a. _____
- b. _____
- c. _____

4. State how to calculate straight-line depreciation.

5. State the rule for determining which assets to set up on a depreciation schedule.

6. Distinguish between depreciable and nondepreciable assets. Write a "D" in the blanks before depreciable assets and an "N" before nondepreciable assets.

- ☐ a. Land and conservation improvements to land
- ☐ b. Fences
- ☐ c. Personal residences

TEST

- ____d. Personal cars, pickups, or motorcycles of which less than half of the mileage is used directly in the SOE Program
- ____e. Tractors, implements, machinery, and equipment
- ____f. Feed, fuel, fertilizer, and consumable supplies
- ____g. Items purchased for resale
- ____h. Barns and buildings
- ____i. Vehicles of which more than half of mileage is used directly in the SOE Program
- ____j. Water systems
- ____k. Purchased or raised breeding animals (optional)

7. Match assets to their suggested allowed years of depreciation. Write the correct numbers in the blanks.

- | | |
|--|----------------------------|
| ____a. Fifteen years | 1. Vehicles |
| ____b. Eight years | 2. Tractors and implements |
| ____c. Twenty years | 3. Barns and buildings |
| ____d. Actual expected productive life | 4. Other assets |
| ____e. Three years | 5. Fences |
| ____f. Five years | 6. Breeding stock |

8. Arrange in order the steps for handling depreciable assets in the *FFA Record Book*. Write a "1" in the blank before the first step, a "2" before the second step, and so on.

- ____a. Record necessary information on Depreciation Schedule in *FFA Record Book*
- ____b. On the date item is acquired, record cost of item on Expenses page under appropriate enterprise column
- ____c. Record necessary information on Depreciation Schedule in new book

TEST

- ☐ d. Record Ending-of-Year Balance figure on ending inventory as the value of item on that date, according to the depreciation schedule
- ☐ e. Compute annual depreciation to be taken
- ☐ f. Record in new book as beginning inventory value for the item the exact ending inventory value from previous book

(NOTE: Test question 9 lists the assignment sheet. It is an important part of this test. If it has not been completed, check with your instructor.)

9. Complete a depreciation schedule.

DEPRECIATION
UNIT IV

ANSWERS TO TEST

- | | | | | |
|----|----|----|----|---|
| 1. | a. | 10 | f. | 9 |
| | b. | 7 | g. | 3 |
| | c. | 6 | h. | 8 |
| | d. | 5 | i. | 1 |
| | e. | 2 | j. | 4 |

2. b, e, f

3. a. Wear and tear due to use
 b. Obsolescence due to new technology
 c. Deterioration due to elements of nature

4. Subtract the salvage value from the cost, and divide the difference by the productive life to find the amount depreciated each year

5. Set up only those assets with an expected useful life of more than one year and a cost of \$100 or more at time of purchase

- | | | | | | | |
|----|----|---|----|---|----|---|
| 6. | a. | N | f. | N | k. | D |
| | b. | D | g. | N | | |
| | c. | N | h. | D | | |
| | d. | N | i. | D | | |
| | e. | D | j. | D | | |

- | | | | | |
|----|----|---|----|---|
| 7. | a. | 3 | d. | 4 |
| | b. | 2 | e. | 1 |
| | c. | 5 | f. | 6 |

ANSWERS TO TEST

- | | | | | |
|----|----|---|----|---|
| 8. | a. | 3 | d. | 4 |
| | b. | 1 | e. | 2 |
| | c. | 6 | f. | 5 |

9. Evaluated to the satisfaction of the instructor

**CLOSING RECORDS
UNIT V****UNIT OBJECTIVE**

After completing this unit, the student should be able to close out FFA records at the end of the record-keeping period. The student will show this knowledge by completing the assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Arrange in order steps for completing an ending inventory.
2. Arrange in order steps for totaling Sales and Other Income and Expenses pages.
3. State the formulas for calculating total head owned or acres harvested during the year.
4. Arrange in order steps for completing FFA *Record Book* Summary pages.
5. Arrange in order steps for starting a new FFA *Record Book*.
6. Close out an FFA *Record Book*.

CLOSING RECORDS
UNIT V

SUGGESTED ACTIVITIES

I. Unit contents

- A. Objective sheet
- B. Suggested activities
- C. Information sheet
- D. Assignment sheets
 - 1. Assignment Sheet #1 — Arrange in Order Steps for Completing FFA *Record Book* Summary Pages
 - 2. Assignment Sheet #2 — Arrange in Order Steps for Starting a New FFA *Record Book*
 - 3. Assignment Sheet #3 — Close out an FFA *Record Book*
- E. Answers to assignment sheets
- F. Test
- G. Answers to test

II. Instructor's guide

- A. Make sure that all students have personal copies of FFA *Record Book*.
- B. Introduce unit.

SUGGESTION:

- Stress to students that it is as important to be accurate in closing records as it is to be accurate in all other phases of the record-keeping system.
- C. Provide students with objective sheet.
- D. Discuss unit and specific objectives.
- E. Provide students with information and assignment sheets.
- F. Discuss information and assignment sheets.

- 1. Use Information Sheet, Section I to discuss steps for completing the ending inventory.

SUGGESTIONS:

- Remind students of the importance of writing thorough descriptions of the asset items on the inventory.

SUGGESTED ACTIVITIES

- Stress to students that the horizontal totals of the enterprise columns must equal the amount of the Total Value column.
2. Discuss steps for totaling Sales and Other Income and Expenses pages. Use information Sheet, Section II.

SUGGESTIONS:

- Explain the importance of making any necessary transfers.
 - Again, stress that the horizontal totals of the enterprise columns must equal the amount of the Total column.
3. Discuss formulas used for calculating total head of livestock during year and total acres raised during year. Use Information Sheet, Section III.

SUGGESTION:

- Explain to students that proper calculations are necessary in order for the student to see the scope of the SOE Program.
4. Demonstrate steps for completing the Summary page. Use Information Sheet, Section IV. Have students complete Assignment Sheet #1 and #3.

SUGGESTIONS:

- Point out to students that the sequence of steps is the main item of importance.
 - Remind students that mathematical accuracy is important.
 - Stress to students that Assignment Sheet #3 is a good practice activity for closing out their own record books.
5. Demonstrate steps for starting a new FFA *Record Book*. Use Information Sheet, Section V. Have students complete Assignment Sheet #2.

SUGGESTION:

- Stress the importance of accuracy when transferring information and numbers.

G. Give test.

- III. Unit reference — *Future Farmers of America Supervised Occupational Experience Program Record Book*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1984.

CLOSING RECORDS UNIT V

INFORMATION SHEET

I. Steps for completing the ending inventory

- A. Fill out date line
- B. Label enterprise columns to match those in rest of book
- C. Value assets, using same procedures as those used in beginning inventory
- D. Total all columns (Figure 1)

EXAMPLE:

FIGURE 1

ENDING INVENTORY

December 31, 19_____

Item or Description	Total Value	Value to the Enterprise					
		¹ SWINE	² BEEF	³ WHEAT	⁴ LAND	⁵ EQUIP.	⁶ Agribusiness
Ending Inventory Totals	16,410 50	560 00	936 00	914 50	11,000 00		

II. Steps for totaling Sales and Other Income and Expenses pages

(NOTE: Exhibition record income should be recorded only once a year at closing when all exhibition record income is totaled and transferred on December 31.)

- A. Transfer to the Sales and Other Income page the total, by enterprise, of all exhibition record income
- B. Post the prize money for each enterprise under the appropriate enterprise column

(NOTE: Once the totals for the different enterprises have been calculated, a sample entry would look like that below. See Figure 2)

INFORMATION SHEET

EXAMPLE:

FIGURE 2 SALES AND OTHER INCOME

Date	Item of Sale and Description	Total Sale or Income	Charge to Enterprise					
			1 SWINE	2 BEEF	3 WHEAT	4 LAND	5 EQUIP.	6 Agribusiness
12/31	PRIZE MONEY transfer	14 00	14 00					

C. Total all Sales and Other Income columns

D. Total all Expenses columns

(NOTE: On the Sales and Other Income page, and on the Expenses page, the final totals of all enterprise columns must equal the total Sales and Other Income and total Expenses columns, respectively.)

III. Formulas for calculating total head owned or acres harvested during the year

A. Livestock

$$\text{Total Head During Year} = \text{Total Head on Ending Inventory} + \text{Total Head Sold} + \text{Total Head on Loss Record}$$

(NOTE: Total head bought will be taken from the Expenses page. Total head raised will come from the livestock yield form. Each livestock enterprise classification should be calculated separately.)

B. Acreage

$$\text{Total Acres During Year} = \frac{\text{Total Acres Harvested During Calendar Year}}{\text{Calendar Year}}$$

(NOTE: Figure each crop variety as a separate enterprise. On hay crops, such as alfalfa, that are harvested more than once every year, count the acreage only once.)

INFORMATION SHEET

IV. Steps for completing Summary pages

- A. List enterprise column names from top to bottom on left, exactly as they are from left to right in rest of FFA *Record Book*
- B. Transfer Sales and Other Income column totals to appropriate enterprise lines on Summary page under Column A
- C. Transfer Expenses page column totals to appropriate enterprise lines on Summary page under Column B
- D. Calculate net cash income in Column C on Summary page by subtracting Column B from Column A
- E. Transfer beginning inventory values for each enterprise column on Beginning Inventory page to appropriate line under Column D on Summary page
- F. Transfer ending inventory values for each enterprise column from Ending inventory page to appropriate line under Column E on Summary page
- G. Calculate inventory difference in Column F on Summary page by subtracting Column D from column E
- H. Calculate net profit or loss in Column G by adding Columns C and F on Summary page

(NOTE: Be sure to combine any negative and positive numbers *properly*.)
- I. Transfer beginning and ending scope for production agriculture from the beginning and ending inventories
- J. Calculate total scope for production agriculture

(NOTE: The formula for calculating total production scope is given in Section III of the Information Sheet.)
- K. Calculate total scope for agribusiness

(NOTE: Total scope for agribusiness is based on units by which payments are made: hours worked, bales of hay hauled, ricks of wood sold, and so on.)
- L. Transfer to Summary page from page 35 the number of teacher visits made
- M. Transfer to Summary page from page 28 the number of improvement practices completed
- N. Transfer to Summary page from page 29 the number of skills or competencies developed
- O. Compute on page 11 the ending net worth
- P. Compute on pages 38 and 39 the applicable enterprise analysis forms

INFORMATION SHEET

V. Steps for starting a new FFA *Record Book*

- A. Fill out front cover
- B. Label enterprise columns throughout the new book to match those in previous book
- C. Fill out agreement
- D. Fill out long-term plan
- E. Transfer exact ending inventory information from previous book to new beginning inventory
- F. Transfer exact ending net worth information from previous book to new beginning net worth
- G. Fill out accounts payable and receivable if they have not been closed out
- H. Transfer into new FFA *Record Book* breeding record information for those animals that are still pregnant
- I. Transfer weight record information on projects that are still owned
- J. Transfer depreciation schedule information to new FFA *Record Book*

CLOSING RECORDS UNIT V

ASSIGNMENT SHEET #1 — ARRANGE IN ORDER STEPS FOR COMPLETING FFA RECORD BOOK SUMMARY PAGES

NAME _____ SCORE _____

Accuracy and proper sequence become *very critical* in properly closing out the FFA Record Book at the end of the accounting period.

As a review, arrange in order the steps below for completing the Summary pages. Write a "1" before the first step, a "2" before the second step, and so on.

- ____A. Calculate inventory difference in Column F on Summary page by subtracting Column D from Column E
- ____B. Compute on page 11 the ending net worth
- ____C. Transfer to Summary page from page 29 the number of skills or competencies developed
- ____D. Transfer to Summary page from page 35 the number of teacher visits made
- ____E. Calculate net profit or loss in Column G by adding Columns C and F on Summary page
- ____F. Calculate total scope for agribusiness
- ____G. Transfer Expenses page column totals to appropriate enterprise lines on Summary page under Column B
- ____H. Calculate total scope for production agriculture
- ____I. Calculate net cash income in Column C on Summary page by subtracting Column B from Column A
- ____J. Transfer beginning inventory values for each enterprise column on Beginning Inventory page to appropriate line under Column D on Summary page
- ____K. Compute on pages 38 and 39 the applicable enterprise analysis forms
- ____L. Transfer ending inventory values for each enterprise column from Ending Inventory page to appropriate line under Column E on Summary page
- ____M. List enterprise column names from top to bottom on left, exactly as they are from left to right in rest of FFA Record Book
- ____N. Transfer to the summary page from page 28 the number of improvement practices completed
- ____O. Transfer beginning and ending scope for production agriculture from beginning and ending inventories
- ____P. Transfer Sales and Other Income column totals to appropriate enterprise lines on Summary page under Column A

CLOSING RECORDS
UNIT VASSIGNMENT SHEET #2 — ARRANGE IN ORDER STEPS FOR STARTING
A NEW FFA *RECORD BOOK*

NAME _____

SCORE _____

In order to maintain accuracy and consistency throughout the record-keeping system, the organized transferral of information to the new *FFA Record Book* becomes very important.

For review, arrange in order the steps below. Write a "1" before the first step, a "2" before the second step, and so on.

- ____A. Fill out long-term plan
- ____B. Fill out front cover
- ____C. Transfer depreciation schedule information to new *FFA Record Book*
- ____D. Fill out accounts payable and receivable if they have not been closed out
- ____E. Transfer exact ending net worth information from previous book to new beginning net worth
- ____F. Label enterprise columns throughout the new book to match those in previous book
- ____G. Transfer weight record information on projects that are still owned
- ____H. Fill out agreement
- ____I. Transfer into new *FFA Record Book* breeding record information for those animals that are still pregnant
- ____J. Transfer exact ending inventory information from previous book to new beginning inventory

**CLOSING RECORDS
UNIT V****ASSIGNMENT SHEET #3 — CLOSE OUT AN FFA RECORD BOOK**

NAME _____ SCORE _____

Accuracy in closing out the record-keeping system at the end of the year is another important aspect of the total record-keeping system.

Using the records on the following pages, close out the record book.

ASSIGNMENT SHEET #3

BEGINNING INVENTORY

Item or Description	Total Value	Value to the Enterprise					
		¹ SWINE	² BEEF	³ WHEAT	⁴ LAND	⁵ EQUIP.	⁶ Agribusiness
2000 Head pigs, 175 lbs each							
\$72 invested in each	184 00	184 00					
1 Simmental Cow (Purchased 11/1/80)	600 00		600 00				
1 Simmental Calf (4 months old and will be a show steer)							
Production cost invested in	246 00		246 00				
Plan to work ground and plant wheat later	—			—			
20 acres farm land to plant wheat crop on	14,000 00				14,000 00		
1 Portable A-frame hoghouse (Purchased July 1, 1980)							
See depreciation Schedule	485 00	485 00					
200 ⁰ of hog feed @ \$12.50/ton	26 00	26 00					
Swine Show Equip.	12 00	12 00					
Best Show Equip. (Halter, brush, comb)	42 00		42 00				
400 lbs wheat @ \$4.30/lb.	1720 00			1720 00			
Beginning Inventory Totals	17315 00	707 00	888 00	1720 00	14,000 00		

ASSIGNMENT SHEET #3

STUDENT'S NET WORTH STATEMENT (BALANCE SHEET)

(NOTE: This balance sheet is actually a condensed version. An actual balance sheet includes much more detail. Lenders may require an actual balance sheet.)

A. Student's Assets

	Beginning Date <u>9-1-81</u>	Ending Date _____
1. Total inventory value (from pages 8 and 9) _____	\$ <u>15,595.00</u>	\$ _____
2. Accounts receivable (from page 20) _____	\$ _____	\$ _____
3. Cash money on hand _____	\$ <u>12.72</u>	\$ <u>2.55</u>
4. Checking account <u>(1st Nat'l Bank)</u>	\$ <u>111.94</u>	\$ <u>97.00</u>
5. Savings account <u>(Liberty Fed. Sav. & Loan)</u>	\$ <u>2,134.18</u>	\$ <u>2,179.74</u>
6. Other investments (cash surrender on bonds, cash surrender value of life insurance, postal savings, etc.)	\$ _____	\$ _____
<u>12 ga. Shotgun</u>	\$ <u>1100.00</u>	\$ <u>1100.00</u>
<u>1 yr old motorcycle</u>	\$ <u>700.00</u>	\$ <u>700.00</u>
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
A. TOTAL ASSETS	\$ <u>20,832.84</u>	\$ _____

B. Student's Liabilities

1. Unpaid bills <u>(CENTRAL FEE & STORE)</u>	\$ <u>47.51</u>	\$ _____
2. Accounts payable (notes and mortgages) from page 20	\$ _____	\$ _____
3. Other liabilities (specify) _____	\$ _____	\$ _____
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
B. TOTAL LIABILITIES	\$ <u>47.51</u>	\$ _____

NET WORTH (A - B) Beginning \$ 20,785.33 NET WORTH (A - B) Ending \$ _____

(NOTE: Beginning net worth values of this book must be the same as the ending net worth value of the previous book; ending net worth values of this book must be the same as the beginning net worth values of the next book.)

ASSIGNMENT SHEET #3

EXPENSES

Date	Item of Expense and Description	Total Expense	Charge to Enterprise						
			1 Swine	2 Beef	3 Wheat	4 Land	5 Equip	6 Agribusiness	
9/12	200# hogfeed	26 00	26 00						
9/15	30 bu. @ 5.15/bu Speed Wheat	154 50			154 50				
9/15	1 yr of land for wheat (20 acres @ \$25.00/Acre)	500 00			500 00				
9/16	Entry Fee For Gilts (State Fair)	8 00	8 00						
9/22	2 tons 10-20-10 @ \$130/T for wheat	260 00			260 00				
9/27	Use of End's Equip. for disking & planting wheat	152 80			152 80				
9/30	Pasture rent in exchange for labor	10 00		10 00					
10/10	200# hogfeed	26 20	26 20						
10/11	Breed fee for 2 gilts @ \$50.00/gilt	100 00	100 00						
10/27	1 Hamp Barrow	75 00	75 00						
10/27	1 Cross Barrow	75 00	75 00						
10/31	Get Pasture rent in exchange for labor	10 00		10 00					
11/2	500# hogfeed	66 25	66 25						
11/30	New Pasture rent in exchange for labor	10 00		10 00					
12/31	Dec. Pasture rent in exchange for labor	10 00		10 00					

ASSIGNMENT SHEET #3

SUMMARY OF STUDENT'S

PRODUCTION	A Income (pages 12 & 13)	B Expenses (pages 14-19)	C Net Cash Income A-B=C
1 <i>Swine</i>			
2 <i>Beef</i>			
3 <i>Wheat</i>			
4 <i>Land</i>			
5 <i>Equipment</i>			
Sub-Total Production			
AGRIBUSINESS			
6			
Sub-Total Agribusiness			
GRAND TOTAL			

Number teacher visits 10
 Number improvement projects completed 9
 Number supplementary skills developed 15

CLOSING RECORDS
UNIT V

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

A.	7	E.	8	I.	4	M.	1
B.	15	F.	11	J.	5	N.	13
C.	14	G.	3	K.	16	O.	9
D.	12	H.	10	L.	6	P.	2

Assignment Sheet #2

A.	4	F.	2
B.	1	G.	9
C.	10	H.	3
D.	7	I.	8
E.	6	J.	5

Assignment Sheet #3 — See forms on following pages

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #3

ENDING INVENTORY

December 31, 19____

[illegible]

ANSWERS TO ASSIGNMENT SHEETS

STUDENT'S NET WORTH STATEMENT (BALANCE SHEET)

(NOTE: This balance sheet is actually a condensed version. An actual balance sheet includes much more detail. Lenders may require an actual balance sheet.)

A. Student's Assets

	Beginning Date <u>9-1-81</u>	Ending Date <u>12-31-81</u>
1. Total inventory value (from pages 8 and 9) _____	\$ <u>17,315.00</u>	\$ <u>16,442.59</u>
2. Accounts receivable (from page 20) _____	\$ <u>—</u>	\$ <u>—</u>
3. Cash money on hand _____	\$ <u>12.12</u>	\$ <u>2.25</u>
4. Checking account <u>(1st Nat'l Bank)</u>	\$ <u>111.06</u>	\$ <u>97.00</u>
5. Savings account <u>(Liberty Fed. Sav. & Loan)</u>	\$ <u>2,134.18</u>	\$ <u>2,179.24</u>
6. Other investments (cash surrender on bonds, cash surrender value of life insurance, postal savings, etc.)	\$ _____	\$ _____
<u>12 ga. Shotgun</u>	\$ <u>160.00</u>	\$ <u>160.00</u>
<u>4yr-old motorcycle</u>	\$ <u>700.00</u>	\$ <u>700.00</u>
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
A. TOTAL ASSETS	\$ <u>20,432.24</u>	\$ <u>19,582.09</u>

B. Student's Liabilities

1. Unpaid bills <u>(CENTRAL FEE STORE)</u>	\$ <u>47.51</u>	\$ <u>—</u>
2. Accounts payable (notes and mortgages) from page 20	\$ _____	\$ <u>—</u>
3. Other liabilities (specify) _____	\$ _____	\$ <u>—</u>
_____	\$ _____	\$ <u>—</u>
_____	\$ _____	\$ <u>—</u>
B. TOTAL LIABILITIES	\$ <u>47.51</u>	\$ _____

NET WORTH (A - B) Beginning \$ 20,384.73 NET WORTH (A - B) Ending \$ 19,582.09

(NOTE: Beginning net worth values of this book must be the same as the ending net worth value of the previous book; ending net worth values of this book must be the same as the beginning net worth values of the next book.)

ANSWERS TO ASSIGNMENT SHEETS

SALES AND OTHER INCOME

Date	Item of Sale and Description	Total Sale or Income	Charge to Enterprise					
			1 SWINE	2 BEEF	3 WHEAT	4 LAND	5 EQUIP	6 Agribusiness
9/15	1 yr. rent of land for							
	Wheat (20 acres @ \$25./acre)	500 00				500 00		
9/20	10 hrs Tractor driving for Mr. Smith	40 00						40 00
9/22	400 bu. wheat @ \$4.42/bu.	1768 00			1768 00			
9/27	Exchange labor for Sept. helping plant Parents' wheat (38 hrs)							
	in exchange for Equip. use	152 80						152 80
9/30	Exchange labor for Sept. Pasture rent	10 00						10 00
10/24	1 Bred Hamp Gilt	185 00	185 00					
10/31	Exchange labor for Oct. pasture rent for Cow & Calf	10 00						10 00
11/8	1 Bred Hamp Gilt	225 00	225 00					
11/30	Exchange labor for Nov. Pasture rent for Cow & Calf	10 00						10 00
12/1	1 Cross barrow	90 00	90 00					
12/1	Rented out wheat Pasture for Dec.	80 00			80 00			
12/31	Exchange labor pasture rent for Dec.	10 00						10 00
12/31	PRIZE MONEY							
	Transfer	14 00	14 00					
	FORWARD TOTALS	3094 80	514 00		1848 00	500 00		222 80

ANSWERS TO ASSIGNMENT SHEETS

SUMMARY OF STUDENT'S

PRODUCTION	A Income (pages 12 & 13)		B Expenses (pages 14-19)		C Net Cash Income A-B=C	
1 SWINE	514	00	376	45	137	55
2 BEEF			40	00	- 40	00
3 WHEAT	1848	00	1067	90	780	70
4 LAND	500	00			500	00
5 EQUIPMENT						
Sub-Total Production	2862	00	1483	75	1378	25
AGRIBUSINESS						
6	232	80			232	80
Sub-Total Agribusiness	232	80			232	80
GRAND TOTAL	3094	80	1483	75	1611	05

Number teacher visits 10
 Number improvement projects completed 9
 Number supplementary skills developed 15

ANSWERS TO ASSIGNMENT SHEETS

SUPERVISED OCCUPATIONAL EXPERIENCE PROGRAM

D Beginning Inventory (page 8)	E Ending Inventory (page 9)	F Inventory Difference E-D=F	G Net Profit or Loss C+F=G	SCOPE HEAD/ACRES BEG END TOTAL
707 00	560 00	-147 00	- 9 45	2 4
888 00	968 00	80 00	40 00	2 2
1720 00	914 50	-805 50	-24 80	40 20
14000 00	14000 00		500 00	20 20
17315 00	16442 50	-872 50	505 75	
				SCOPE TOTAL
				120 1/2
17315 00	16442 50	-872 50	738 55	

(Note: Total scope for agribusiness is based on units of payment, such as hours worked, bales of hay, and so on.)

CLOSING RECORDS
UNIT V

TEST

NAME _____

SCORE _____

1. Arrange in order steps for completing an ending inventory. Write a "1" in the blank before the first step, a "2" before the second step, and so on.
 - ____ a. Label enterprise columns to match those in rest of book
 - ____ b. Value assets, using same procedures as those used in beginning inventory
 - ____ c. Total all columns
 - ____ d. Fill out date line
2. Arrange in order steps for totaling Sales and Other Income and Expenses pages. Write a "1" in the blank before the first step, a "2" before the second step, and so on.
 - ____ a. Total all Sales and Other Income columns
 - ____ b. Total all Expenses columns
 - ____ c. Transfer to the Sales and Other Income page the total, by enterprise, of all exhibition record income
 - ____ d. Post the prize money for each enterprise under the appropriate enterprise column
3. State the formulas for calculating total head owned or acres harvested during the year.
 - a. Livestock — _____

 - b. Acreage — _____

TEST

(NOTE: Test questions 4-6 list the assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

4. Arrange in order steps for completing the FFA *Record Book* Summary pages.
5. Arrange in order steps for starting a new FFA *Record Book*.
6. Close out an FFA *Record Book*.

CLOSING RECORDS
UNIT V

ANSWERS TO TEST

1. a. 2
b. 3
c. 4
d. 1

2. a. 3
b. 4
c. 1
d. 2

3. a.
$$\begin{array}{ccccccc} \text{Total Head} & & \text{Total Head on} & & \text{Total Head} & & \text{Total Head on} \\ \text{During Year} & = & \text{Ending} & + & \text{Sold} & + & \text{Loss Record} \\ & & \text{Inventory} & & & & \end{array}$$

b.
$$\begin{array}{ccc} \text{Total Acres} & & \text{Total Acres} \\ \text{During Year} & = & \text{Harvested During} \\ & & \text{Calendar Year} \end{array}$$

4. Evaluated to the satisfaction of the instructor
5. Evaluated to the satisfaction of the instructor
6. Evaluated to the satisfaction of the instructor

THE LIVESTOCK INDUSTRY UNIT I

UNIT OBJECTIVE

After completing this unit, the student should be able to interpret the importance of the livestock industry to the county and state economies. The student will show this knowledge by completing assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with the livestock industry.
2. Arrange in order the phases of agricultural enterprises.
3. List the six major types of livestock produced in Oklahoma.
4. Identify the top five states that lead production in each livestock enterprise.
5. Arrange agricultural livestock commodities according to their production levels.
6. Match selected livestock products to average yearly, American consumption per person.
7. State the 1983 distribution of the consumer's beef dollar.
8. Match to their correct job descriptions occupational titles related to the livestock industry.
9. Interpret general trends in the livestock industry.
10. Interpret price changes in the livestock industry.
11. Calculate percentage of price increase or decrease for agricultural products.
12. Analyze the effect of the livestock industry on county and state economies.

THE LIVESTOCK INDUSTRY
UNIT I

SUGGESTED ACTIVITIES

- I. Unit contents
 - A. Objective sheet
 - B. Suggested activities
 - C. Transparency masters
 - 1. TM #1 — Leading Beef-Cattle-Producing States (1982)
 - 2. TM #2 — Leading Dairy-Cattle-Producing States (1982)
 - 3. TM #3 — Leading Swine-Producing States (1982)
 - 4. TM #4 — Leading Sheep-Producing States (1982)
 - 5. TM #5 — Leading Horse-Producing States (1982)
 - 6. TM #6 — Leading Poultry-Producing States (1982)
 - 7. TM #7 — Distribution of Beef Dollar (1981)
 - D. Information sheet
 - E. Assignment sheets
 - 1. Assignment Sheet #1 — Interpret General Trends in the Livestock Industry
 - 2. Assignment Sheet #2 — Interpret Price Changes in the Livestock Industry
 - 3. Assignment Sheet #3 — Calculate Percentage of Price Increase or Decrease for Agricultural Products
 - 4. Assignment Sheet #4 — Analyze the Effect of the Livestock Industry on County and State Economies
 - F. Answers to assignment sheets
 - G. Test
 - H. Answers to test

SUGGESTED ACTIVITIES

II. Instructor's guide

A. Obtain materials to supplement unit.

1. Books

- a. Most current edition of *Oklahoma Agricultural Statistics*. Available from Oklahoma Department of Agriculture, 122 State Capitol, Oklahoma City, Oklahoma 73105.

(NOTE: It is recommended that you order one copy for each student enrolled in Vocational Agriculture I.)

- b. *Modern Breeds of Livestock*. Available from Macmillan Publishing Company, Inc., New York, New York 10022.

(NOTE: It is recommended that at least five copies be available for classroom use.)

- c. Most current edition of *Agricultural Statistics*. Available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

- 2. Film — *Food Priced Too High? Compared to What?* Color, 23 minutes, White Farm Equipment, 1977. Available from White Farm Equipment, 2625 Butterfield Road, Oakbrook, Illinois 60521.

(NOTE: This film is available to Oklahoma teachers on a free-loan basis from the Curriculum and Instructional Materials Center, Film Library, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074. Out-of-state teachers must order from the address listed above.)

B. Obtain or make transparencies.

(NOTE: Transparencies are available for purchase from the Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)

C. Introduce unit by focusing on the importance of the livestock industry to the state's economy.

SUGGESTIONS:

- Tell students that the livestock industry contributes over 1.7 billion dollars annually to the state's economy.

SUGGESTED ACTIVITIES

- Tell students that the Oklahoma City Terminal is recognized as one of the largest livestock terminals in the United States. Point out that the OKC Terminal holds the record for marketing more feeder and stocker cattle than any other terminal. In 1983, the market handled over 897,000 head of cattle and calves, which meant gross sales of approximately 362 million dollars. The market also handled 114,000 hogs, with gross sales of approximately 13.3 million dollars.

- Show film, *Food Prices Too High? Compared to What?*

- D. Provide students with objective sheet.
- E. Discuss unit and specific objectives.
- F. Provide students with information and assignment sheets.
- G. Discuss information and assignment sheets.

(NOTE: This unit contains four assignment sheets. It is recommended that they be used in the order that they appear within the unit. Data used in the assignment sheets was taken from *Oklahoma Agricultural Statistics 1982* and *Agricultural Statistics 1981*.)

1. Use Information Sheet, Section I to discuss terms and definitions associated with the livestock industry.

SUGGESTIONS:

- Draw a set of scales on chalkboard and show supply and demand as being balanced on the scale pans. Ask students what happens when the amount of supply is increased in the supply scale pan.
 - Provide examples of weights used for feeder, stocker, and slaughter cattle. Explain how weights vary for different markets.
2. Use Information Sheet, Section II to help students identify the different groups or organizations that affect a livestock product before it reaches the consumer's table.
 3. Use Information Sheet, Section III to introduce the six major types of livestock produced in Oklahoma.

SUGGESTION:

- Tell students that cattle and calves lead the livestock industry as the number one commodity, and that they contribute more than 1.8 billion dollars to the national economy annually. Have students survey the effect that each of the six livestock types has on the county's economy.

SUGGESTED ACTIVITIES

4. Use Information Sheet, Section IV and Transparencies #1 through #6 to identify the leading state producers of livestock.

SUGGESTIONS:

- Relate Oklahoma's ranking as a livestock industry producer. For instance, in 1982, Oklahoma ranked sixth in cattle and calf production, twenty-ninth in dairy production, twenty-first in sheep production, twenty-sixth in swine production, third in horse production, and twenty-ninth in poultry production.
 - Tell students that Oklahoma is first in beef production of cattle per square mile.
 - Use Transparencies #1 through #6 to show states that lead in livestock production.
5. Use Information Sheet, Section V to help students rank the agricultural livestock commodities according to production levels.

SUGGESTIONS:

- Remind students that cattle and calf production leads all other agricultural commodities.
 - Have students use magazines and newspapers to collect current market prices and quantities available for each type of livestock commodity; have them share information in class discussion.
 - To stimulate discussion, ask the students why all the swine-producing states are clustered in an area known as the Corn Belt. Ask the students why Texas is the leading cattle-producing state.
6. Use Information Sheet, Section VI to help students identify the average yearly American consumption per person of beef, pork, dairy products, lamb, and poultry.

SUGGESTIONS:

- Lead a class discussion focusing on the impact of consumers' eating habits on the agricultural livestock market.
- Conduct a class survey to determine the amount of beef, pork, dairy products, lamb, and poultry consumed daily by class members. Convert class averages to a yearly average, and compare to national averages.

SUGGESTED ACTIVITIES

7. Use Information Sheet, Section VII and Transparency #7 to help students visualize the distribution of the consumer's beef dollar.

SUGGESTIONS:

- Begin a class discussion by holding up a one-dollar bill. Ask students key questions relating to the distribution of the consumer's beef dollar: What percent of each dollar is received by the farmer? The retailer? The feeder? The packers/wholesalers? The distributors?
- Discuss the correlation between the distribution of the consumer's beef dollar and the time period that each individual or group keeps the animal. Tell the students that the period of time that each group or individual has the animal varies a great deal: The rancher has the animal for 493 days from conception to weaning, or 59.9 percent of the time; the animal spends 175 days as a stocker, or 21.2 percent of the time; another 150 days, or 18.1 percent of the time is spent in the feedlot; the packer keeps the animal two days, or 0.2 percent of the time; the wholesaler has the animal 5 days, or 0.6 percent of the time; and the retailer has the animal 4 days, or 0.5 percent of the time.
- Follow up class discussion on distribution of the consumer's beef dollar by converting the dollar to one-hundred pennies. Arrange the pennies in stacks to depict the distribution of the consumer's beef dollar.

8. Use Information Sheet, Section VIII to help students identify occupations associated with the livestock industry.

SUGGESTIONS:

- Invite resource people from the area to discuss career opportunities available in the livestock industry.
 - Require each student to interview a person currently engaged in some facet of the livestock industry. Have students give oral reports based on their interviews.
9. Combine Assignment Sheets #1 through #4 to help students interpret the affect of the livestock industry on their county and state economies.

SUGGESTIONS:

- Give each student a copy of the current edition of *Oklahoma Agricultural Statistics*; help students locate information.

SUGGESTED ACTIVITIES

- Help students plot a graph by drawing a graph on the chalkboard.
- Work the following problem on the chalkboard to help those students who may have problems working percentages: Prices of market steers were 63 cents/pound in 1980 and 54 cents/pound in 1982. What was the price change? What was the percent change?
- Use *Oklahoma Agricultural Statistics* and *Agricultural Statistics* to update facts in Assignment Sheet #1.

H. Give test.

III. Unit references

- A. *Agricultural Statistics 1981*. Washington, D.C.: United States Government Printing Office, 1981.
- B. Briggs, Hilton M., and Dinus M. Briggs. *Modern Breeds of Livestock*. New York: McMillan Publishing Co., Inc., 1980.
- C. *Oklahoma Agricultural Statistics 1982*. Oklahoma City, Oklahoma: The Oklahoma Department of Agriculture, 1982.

Leading Beef-Cattle-Producing States (1982)



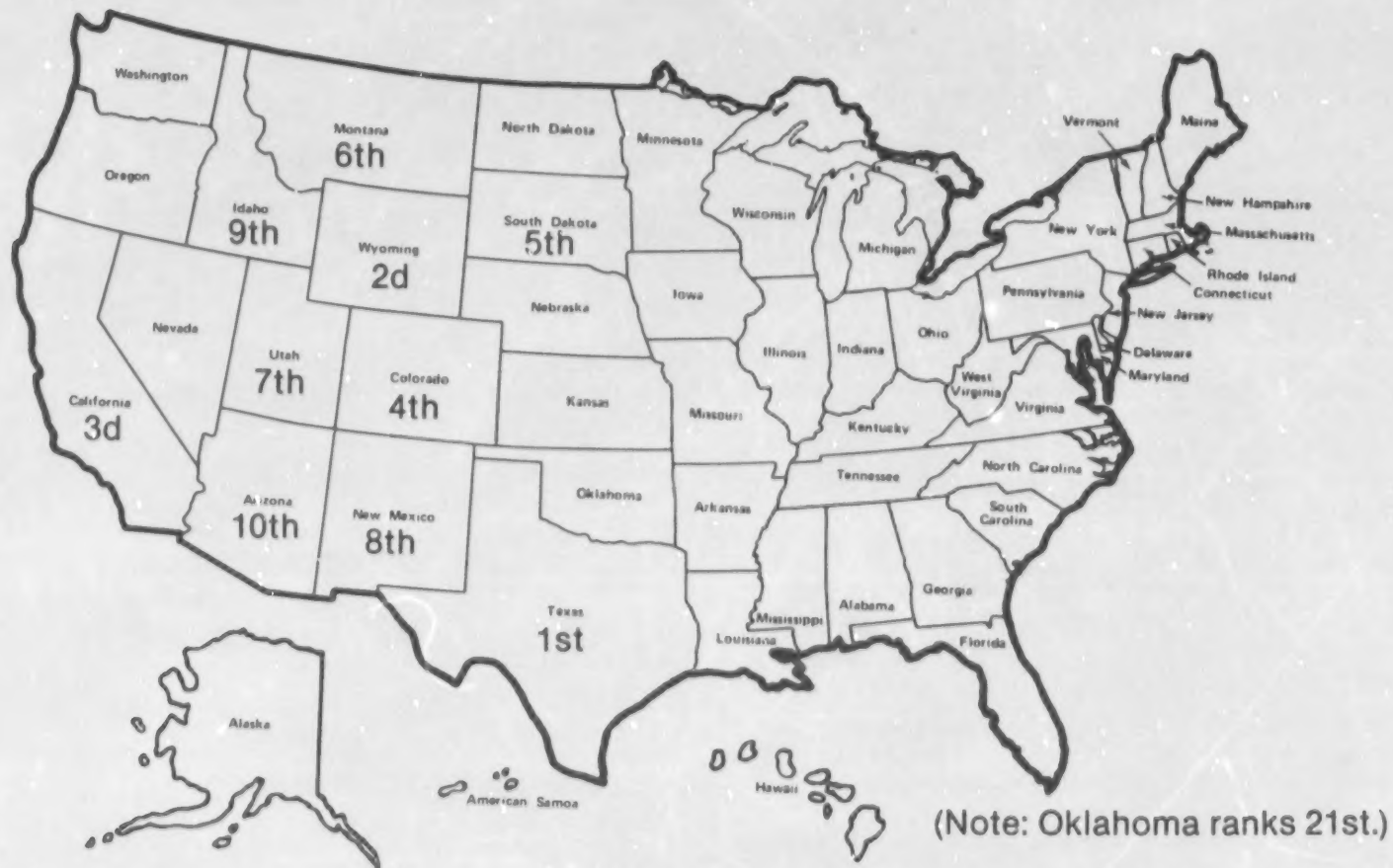
Leading Dairy-Cattle-Producing States (1982)



Leading Swine-Producing States (1982)



Leading Sheep-Producing States (1982)



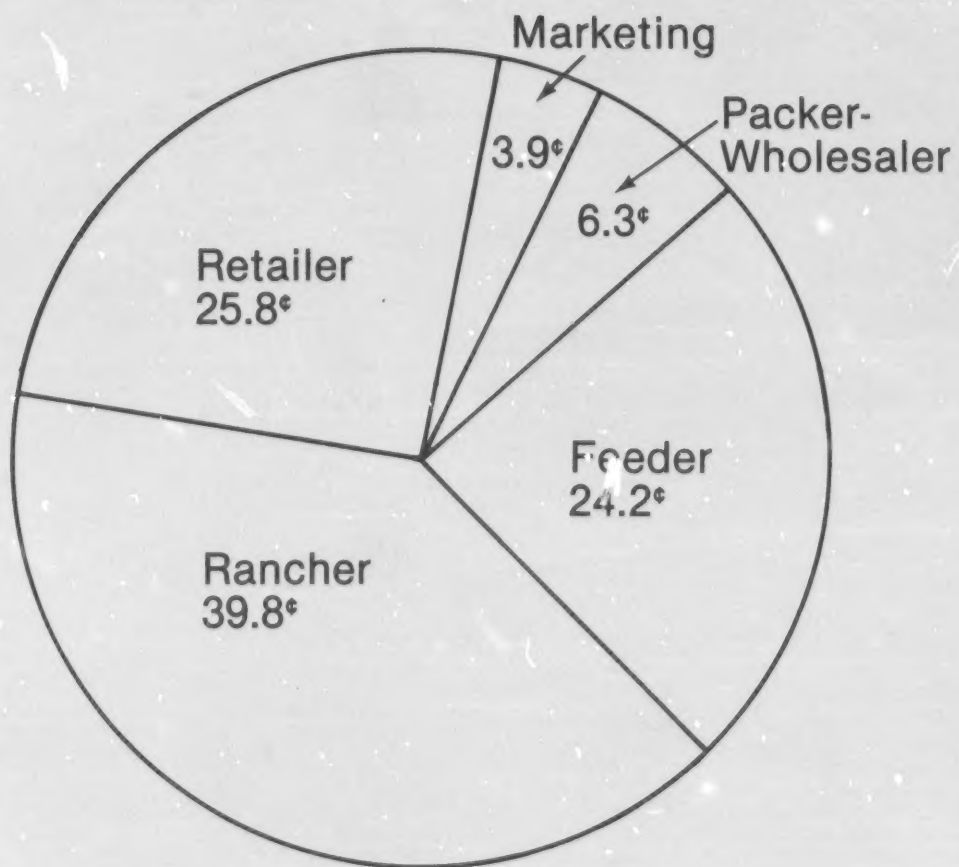
Leading Horse-Producing States (1982)



Leading Poultry-Producing States (1982)



Distribution of Beef Dollar (1981)



THE LIVESTOCK INDUSTRY
UNIT I

INFORMATION SHEET

I. Terms and definitions

- A. Agriculture Industry — Individuals and companies involved in production, processing, and distribution of farm products

(NOTE: The livestock industry is that part of the agriculture industry that deals with livestock commodities.)

- B. Commodity — Product of agriculture

EXAMPLES: Beef, pork, lamb, dairy products

- C. Consumer — Individual who uses agricultural products

- D. Cycle — Recurring change in price and production of agricultural commodities

- E. Distribution — Process by which agricultural products are made available to the consumer

- F. Processing — Preparing farm products for use

EXAMPLES: Slaughtering, cutting, packaging

- G. Production — Process of growing agricultural products

- H. Trends — Direction of movement of a commodity in terms of production and prices

- I. Stocker cattle — Beef animals that are to be placed on pasture for further growth

(NOTE: Stocker cattle are less than twelve months old, and weigh less than 500 pounds.)

- J. Feeder cattle — Beef animals that have been grown on grass and are ready for the feedlot

(NOTE: Feeder cattle are seventeen to twenty-four months old, and weigh from 500 to 800 pounds.)

INFORMATION SHEET

- K. Slaughter cattle — Steers or heifers that have been fed over one-hundred days in a feedlot and are ready for processing

(NOTE: Slaughter steers weigh from 900 to 1300 pounds; slaughter heifers weigh from 800 to 1,000 pounds. Of all cattle slaughtered, 90 percent are from seventeen to twenty-four months old.)

- L. Veal — Meat from a young calf

- M. Lamb — Meat from a sheep

- N. Beef — Meat from cattle

- O. Demand — Consumers' desire to purchase certain commodities at a certain volume

- P. Supply — Amount of a commodity available for the day's trading market

II. Phases of agricultural enterprises

(NOTE: Phases are ordered from first to last.)

- A. Production

EXAMPLES: Farmers, ranchers

- B. Processing

EXAMPLES: Flour mills, packing plants, graders, processing plants

- C. Distribution

EXAMPLES: Wholesalers, retailers

- D. Consumption

III. Six major types of livestock produced in Oklahoma

- A. Beef cattle and calves

- B. Dairy cattle and products

- C. Swine

- D. Sheep

- E. Horses

- F. Poultry

INFORMATION SHEET

IV. Top five states that lead in livestock production

(NOTE: The following statistics are based on 1982 surveys. States are ranked from most productive to less productive.)

A. Beef cattle

(NOTE: Oklahoma ranks sixth.)

1. Texas
2. Iowa
3. Nebraska
4. Kansas
5. Missouri

B. Dairy cattle

(NOTE: Oklahoma ranks twenty-ninth.)

1. Wisconsin
2. New York
3. Minnesota
4. California
5. Pennsylvania

C. Swine

(NOTE: Oklahoma ranks twenty-sixth.)

1. Iowa
2. Illinois
3. Indiana
4. Missouri
5. Minnesota

INFORMATION SHEET

D. Sheep

(NOTE: Oklahoma ranks twenty-first.)

1. Texas
2. Wyoming
3. California
4. Colorado
5. South Dakota

E. Horses

1. California
2. Texas
3. Oklahoma
4. Illinois
5. Montana

F. Poultry

(NOTE: Oklahoma ranks twenty-ninth.)

1. California
2. Georgia
3. Arkansas
4. North Carolina
5. Alabama

INFORMATION SHEET

V. Ranking of agricultural livestock commodities according to production levels

(NOTE: Commodities are ranked from high to low according to value of production of livestock. Ranking and classification system are based on *Oklahoma Agricultural Statistics 1982*, p. 5.)

- A. Cattle and calves
- B. Milk production
- C. Poultry and eggs
- D. Hogs and pigs
- E. Sheep and wool

VI. Average yearly American consumption per person of selected livestock products

- A. Beef — 114 pounds
- B. Dairy products — 562 pounds
- C. Pork — 75 pounds
- D. Lamb — 1.6 pounds
- E. Poultry — 70 pounds

VII. Distribution of the consumer's beef dollar (1983)

- A. Rancher — 39.8¢
- B. Retailer — 25.8¢
- C. Feeder — 24.2¢
- D. Packer/wholesaler — 6.3¢
- E. Marketing — 3.9¢

VIII. Job descriptions of occupational titles related to the livestock industry

- A. Rancher — Individual who breeds and raises livestock for market, breeding stock, or show
- B. Farmhand or ranch hand — Individual who performs any combination of tasks associated with the care of livestock or livestock facilities

EXAMPLES: Bedding, feeding, watering, loading, weighing, penning

INFORMATION SHEET

- C. Farm or ranch manager — Individual who oversees the daily operations of a farm or ranch
- D. Feedlot employee — Individual who performs any combination of tasks associated with feeding market cattle

EXAMPLES: Feeding, watering, assisting veterinarian, loading, unloading, penning
- E. Feedlot manager — Individual who oversees the tasks associated with feeding market cattle
- F. Artificial inseminator — Individual who injects female livestock with semen for breeding purposes
- G. Auctioneer — Individual who handles bidding during livestock sales
- H. Feedmill operator — Individual who oversees tasks associated with preparing feed for livestock
- I. Cattle buyer — Individual who purchases beef animals for farmers, feeders, or packing plants
- J. Commission agent — Individual who sells livestock to farmers and ranchers
- K. Truck driver — Individual who drives a rig and transports livestock, feed, and other products
- L. Veterinarian — Individual who doctors and treats sick animals
- M. Stocker producer — Individual who purchases cattle for grazing on wheat and/or pasture, and who then markets the cattle before they reach slaughter weight

THE LIVESTOCK INDUSTRY
UNIT I

ASSIGNMENT SHEET #1 — INTERPRET GENERAL TRENDS
IN THE LIVESTOCK INDUSTRY

NAME _____

SCORE _____

Since the early 1960s there have been several trends and cycles affecting the livestock industry. For instance, the publication, *Oklahoma Agricultural Statistics 1982*, showed the following trends.

- Beef cattle inventories were down from previous year by 8 percent while milk cow inventory remained the same.
- Number of cattle being placed in feedlots was up 11 percent from previous year.
- Hog numbers continued to decline and were down 27 percent from previous year. Breeding stock was down 32 percent, and the 1982 pig crop was 38 percent smaller than that of the previous year.
- Sheep and lamb inventories continued to increase, marking the seventh consecutive year of expansion, showing an 8 percent increase from the previous year.

Farmers and ranchers who can follow and forecast livestock trends and cycles can make sound economic decisions. In this assignment, you will be using the current edition of *Oklahoma Agricultural Statistics* to plot inventory information on graphs.

ASSIGNMENT SHEET #1

PART I

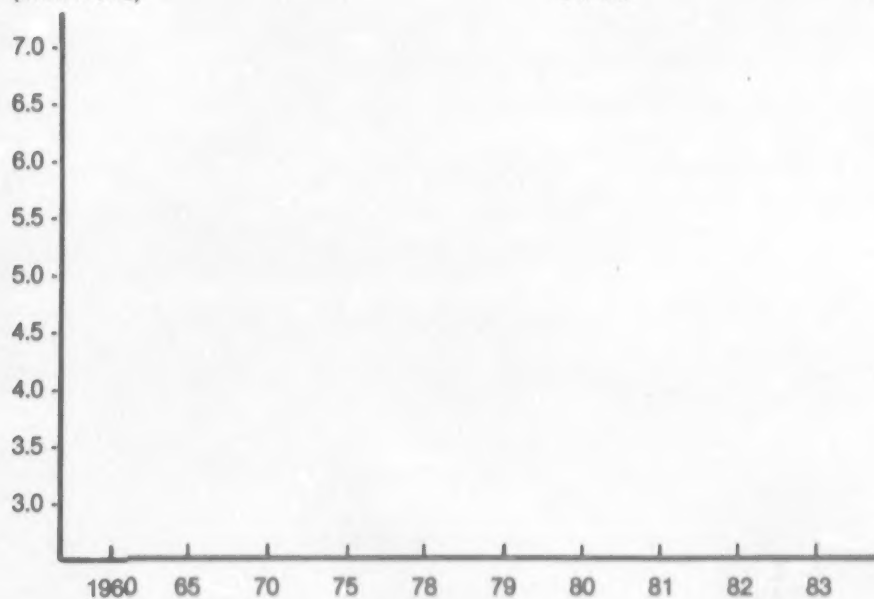
Plot the following information on the state and national graphs provided.

A. All cattle and calves

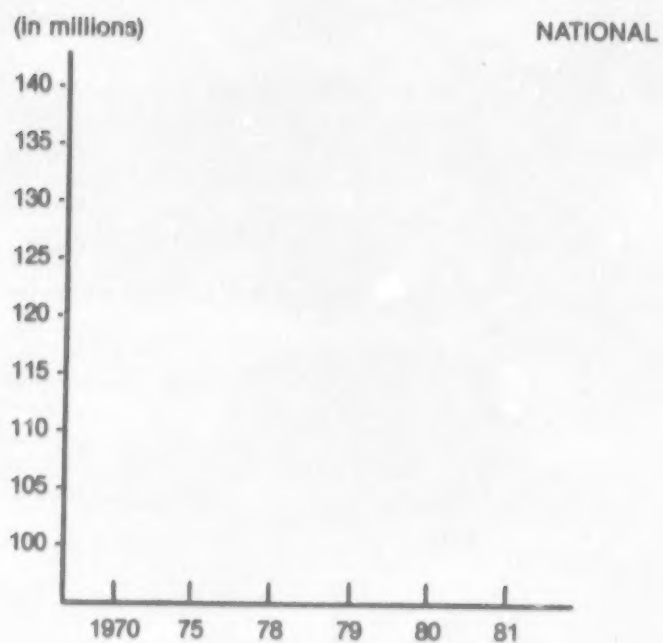
Year	State	National	Year	State	National
1960	3,378,000	Not available	1979	5,300,000	110,864,000
1965	4,352,000	Not available	1980	5,500,000	111,192,000
1970	4,985,000	112,369,000	1981	5,400,000	115,013,000
1975	6,500,000	132,028,000	1982	5,800,000	Not available
1978	5,900,000	116,375,000	1983	5,350,000	Not available

(in millions)

STATE



ASSIGNMENT SHEET #1



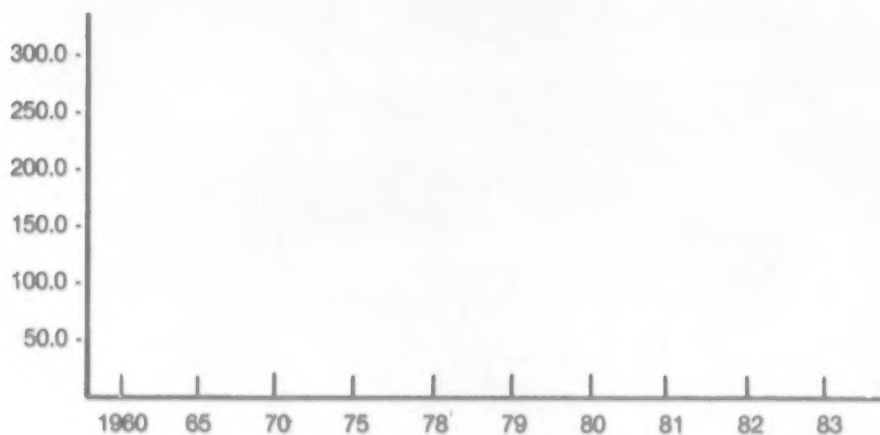
ASSIGNMENT SHEET #1

B. All sheep and lambs

Year	State	National	Year	State	National
1960	274,000	Not available	1979	89,000	12,365,000
1965	149,000	Not available	1980	93,000	12,687,000
1970	138,000	20,423,000	1981	95,000	12,942,000
1975	89,000	14,515,000	1982	105,000	Not available
1978	81,000	12,421,000	1983	117,000	Not available

(in thousands)

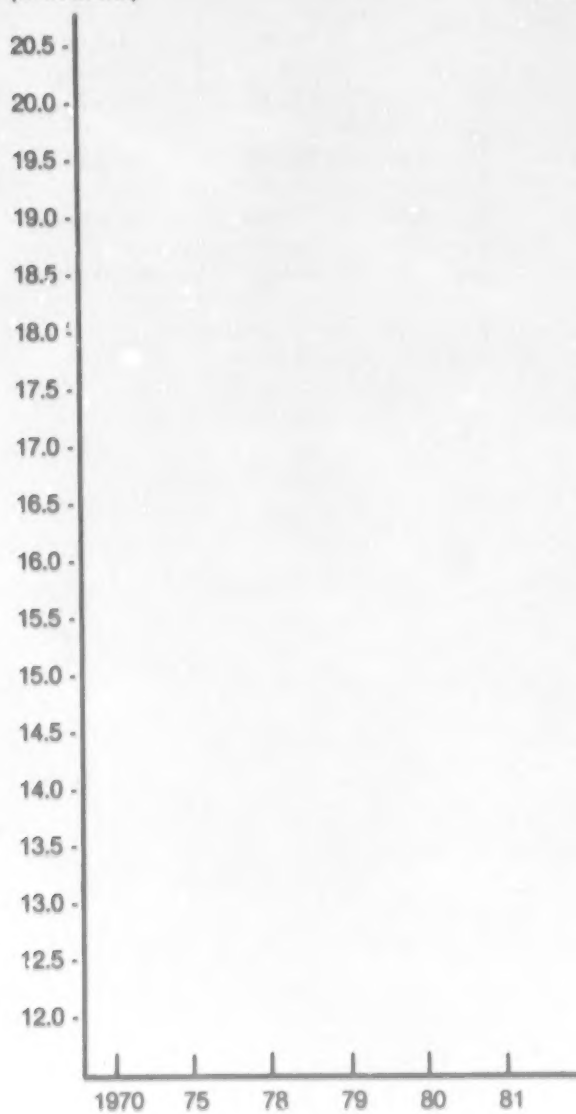
STATE



ASSIGNMENT SHEET #1

(In millions)

NATIONAL



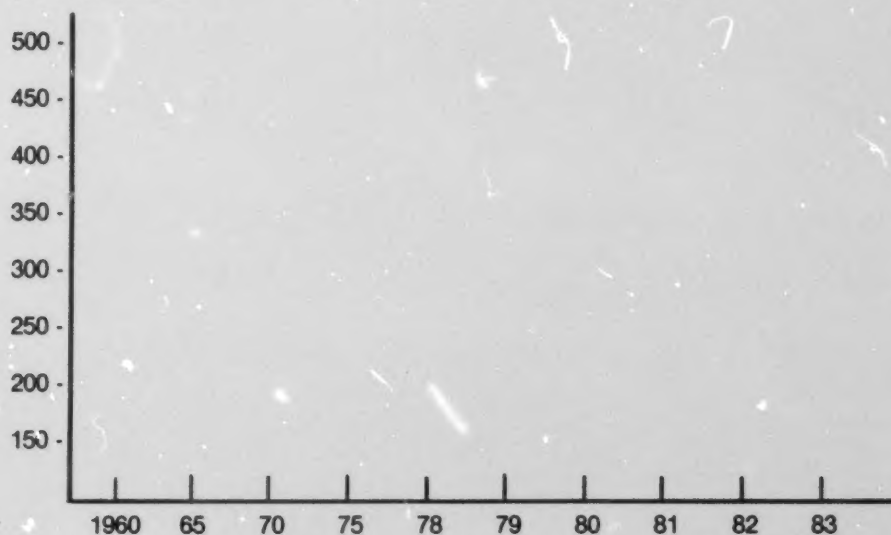
ASSIGNMENT SHEET #1

C. Hogs

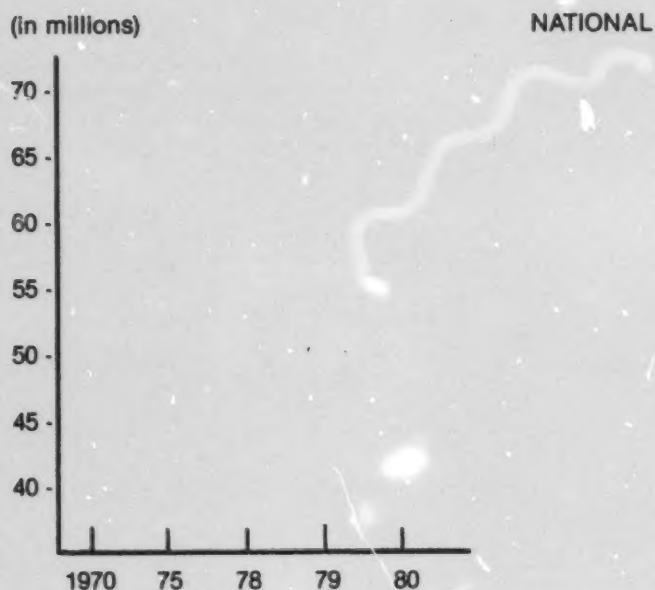
Year	State	National	Year	State	National
1960	475,000	Not available	1979	370,000	65,020,000
1965	307,000	Not available	1980	350,000	65,255,000
1970	442,000	64,639,000	1981	245,000	Not available
1975	300,000	47,860,000	1982	180,000	Not available
1978	315,000	55,240,000	1983		

(in thousands)

STATE



ASSIGNMENT SHEET #1



PART II

Use the plotted graphs and the information in Part I to answer the following questions about livestock trends.

A. What year was the state's cattle inventory the highest? _____

B. What is the cattle inventory this year? _____

Why? _____

C. With the change in inventory, what do you think will happen to the cattle prices?

ASSIGNMENT SHEET #1

D. What year was the state's lamb and sheep inventory the highest? _____

E. What is the lamb and sheep inventory this year? _____

1. Is inventory up or down? _____

2. Why? _____

F. What year was the state's hog inventory the highest? _____

G. What is the hog inventory this year? _____

1. Is inventory up or down? _____

2. Why? _____

THE LIVESTOCK INDUSTRY
UNIT I

ASSIGNMENT SHEET #2 — INTERPRET PRICE CHANGES
IN THE LIVESTOCK INDUSTRY

NAME _____

SCORE 2

The price received by a farmer for a product is one of the primary factors that causes the farmer to expand or to decrease livestock operations.

In this assignment, you will be using the current edition of the *Oklahoma Agricultural Statistics* to plot prices received by farmers for their livestock products.

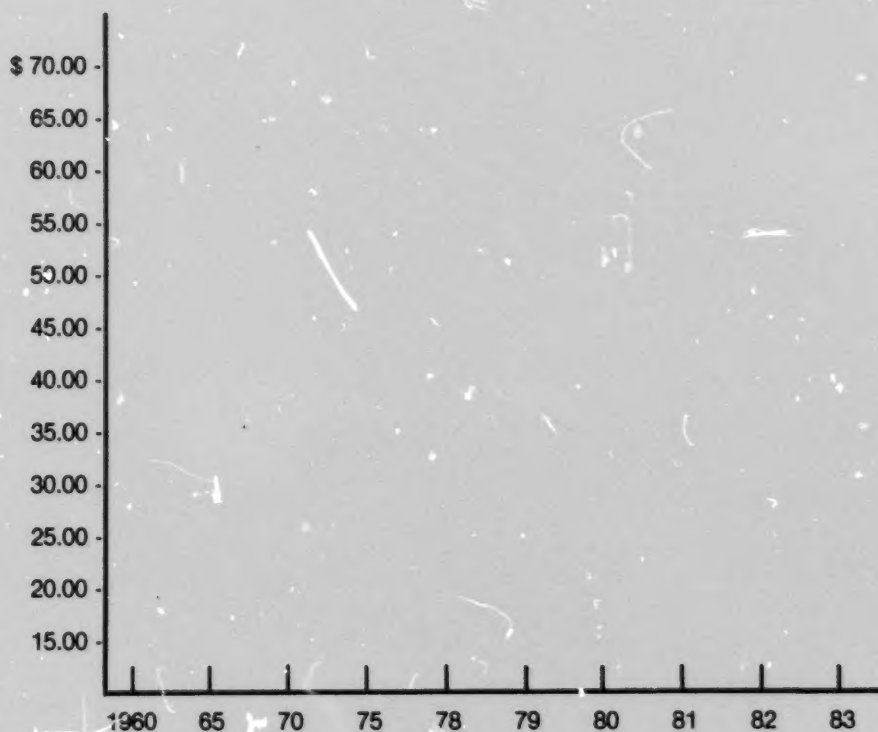
ASSIGNMENT SHEET #2

PART I

Record the following information as bar graphs on the graphs provided.

A. Cattle

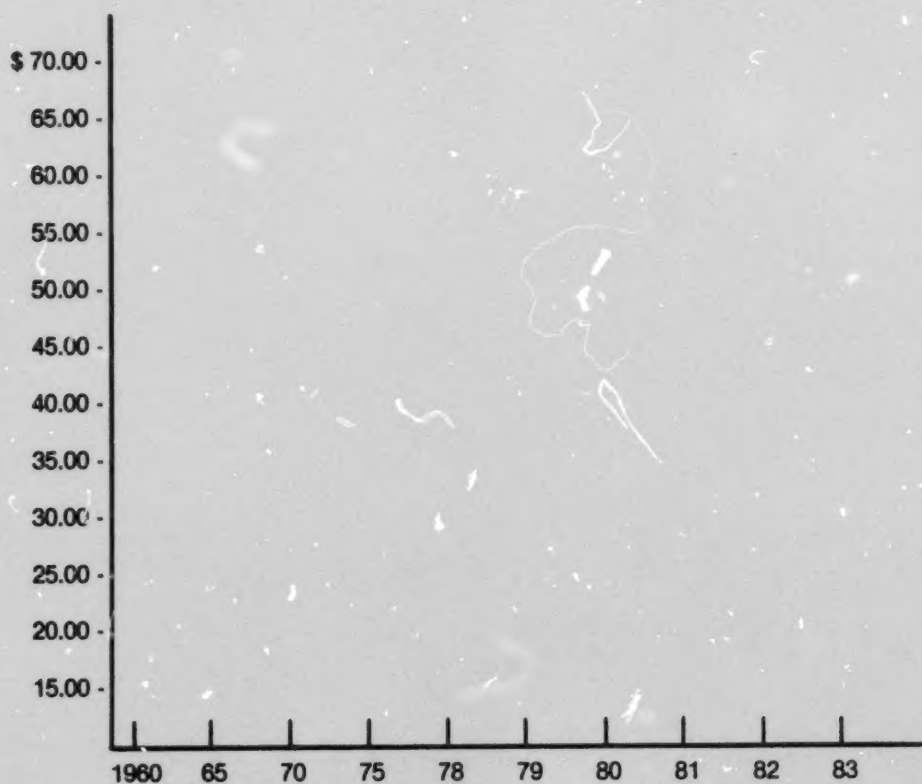
Year	Price per Hundredweight	Year	Price per Hundredweight
1960	\$18.80	1979	\$69.00
1965	19.30	1980	62.70
1970	27.30	1981	57.40
1975	30.00	1982	54.10
1978	49.60	1983	



ASSIGNMENT SHEET #2

B. Lambs

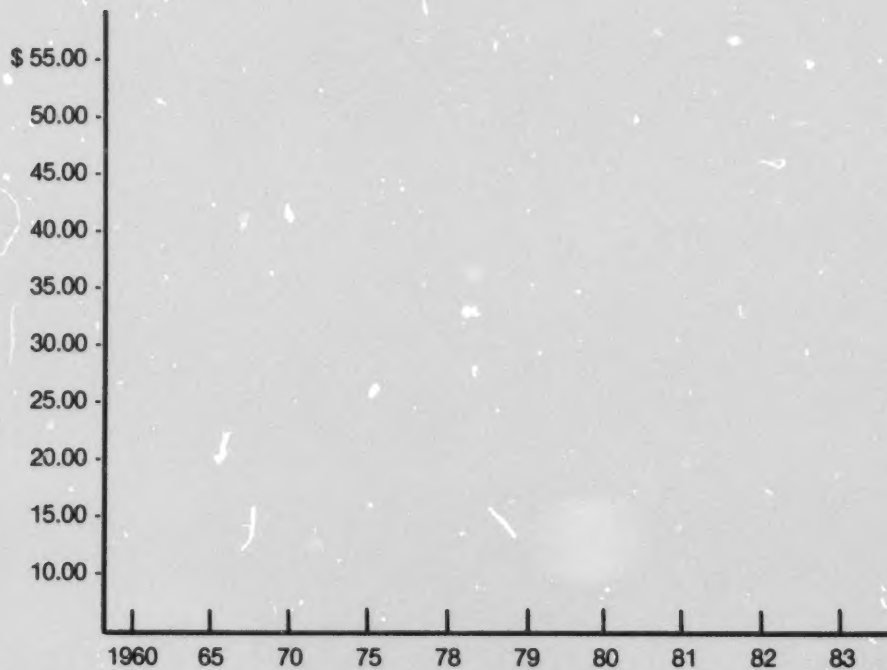
Year	Price per Hundredweight	Year	Price per Hundredweight
1960	\$18.40	1979	\$69.40
1965	22.80	1980	62.00
1970	26.00	1981	56.30
1975	39.30	1982	56.10
1978	56.50	1983	55.00



ASSIGNMENT SHEET #2

C. Hogs

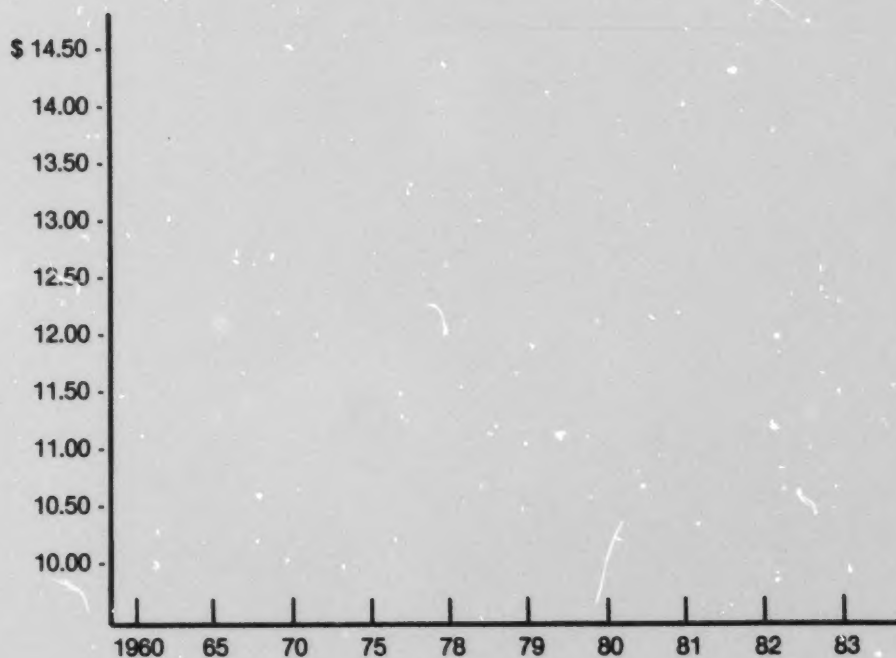
Year	Price per Hundredweight	Year	Price per Hundredweight
1960	\$14.80	1979	\$41.20
1965	19.50	1980	37.20
1970	22.60	1981	42.70
1975	46.50	1982	50.80
1978	46.30	1983	



ASSIGNMENT SHEET #2

D. Milk

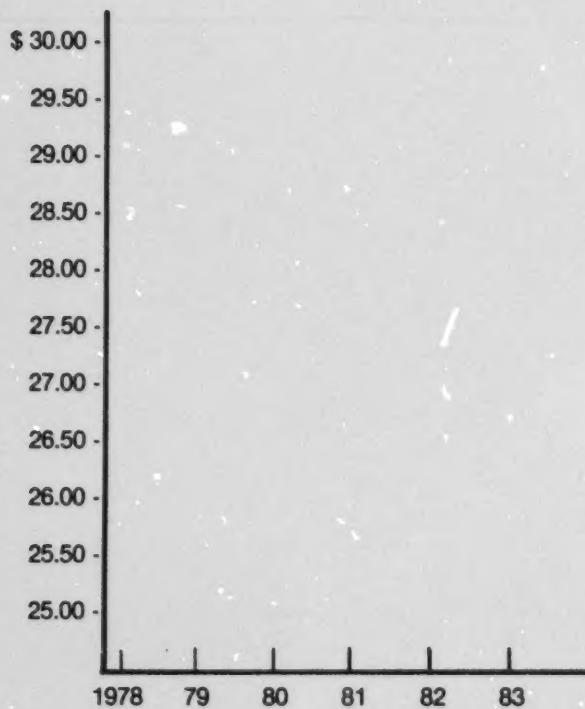
Year	Price per Hundredweight
1978	\$11.00
1979	12.60
1980	13.60
1981	14.40
1982	14.40



ASSIGNMENT SHEET #2

E. Broilers

Year	Price per Hundredweight
1978	\$26.00
1979	26.00
1980	27.50
1981	29.00
1982	27.50



ASSIGNMENT SHEET #2

PART II

Use the plotted graphs, the information in Part I, and information in Assignment Sheet #1 to answer the following questions about livestock prices.

- A. 1. What year did the rancher receive the highest price for cattle and calves? ____
 2. Were the cattle numbers up or down at this period? _____
- B. 1. What year did the rancher receive the highest price for lambs? _____
 2. Were the lamb numbers up or down at this period? _____
- C. 1. What year did the rancher receive the highest price for hogs? _____
 2. Were the hog numbers up or down at this period? _____
- D. What year did the dairy producer receive the highest price for milk? _____
- E. What year did the producer receive the highest price for broilers? _____

**THE LIVESTOCK INDUSTRY
UNIT I**

**ASSIGNMENT SHEET #3 — CALCULATE PERCENTAGE OF PRICE INCREASE
OR DECREASE FOR AGRICULTURAL PRODUCTS**

NAME _____ SCORE _____

Prices of livestock products change from time to time because of a change in supply and demand, the economic situation of the country, and the political situation.

The purpose of this assignment sheet is to give you practice in calculating price changes. Collect the necessary information and work the following problems.

PART I

Use Assignment Sheet #2 to answer the following questions.

- A. In what year did the producers receive the highest price for products? What was the price?

	Year	Price
1. Cattle	_____	_____
2. Lambs	_____	_____
3. Hogs	_____	_____
4. Milk	_____	_____
5. Broilers	_____	_____

- B. What were the average prices in 1982 for the following products?

	1982 Average Price
1. Cattle	_____
2. Lambs	_____
3. Hogs	_____
4. Milk	_____
5. Broilers	_____

ASSIGNMENT SHEET #3

C. Use current market information to identify prices for the following products.

Current Prices

- | | | |
|----|----------|-------|
| 1. | Cattle | _____ |
| 2. | Lambs | _____ |
| 3. | Hogs | _____ |
| 4. | Milk | _____ |
| 5. | Broilers | _____ |

PART II

Calculate the following problems.

A. Calculate the percent of price decrease or increase for livestock products today as compared to the highest year in the period from 1960 to 1982. Check the percent as an increase or a decrease.

1. Cattle = _____ ☐ Increase ☐ Decrease

2. Lambs = _____ ☐ Increase ☐ Decrease

3. Hogs = _____ ☐ Increase ☐ Decrease

4. Milk = _____ ☐ Increase ☐ Decrease

ASSIGNMENT SHEET #3

5. Broilers = _____ ☐ Increase ☐ Decrease

B. Calculate the percent of price increase or decrease for current livestock products as compared to 1982 prices. Check the percent as an increase or a decrease.

1. Cattle = _____ ☐ Increase ☐ Decrease

2. Lambs = _____ ☐ Increase ☐ Decrease

3. Hogs = _____ ☐ Increase ☐ Decrease

4. Milk = _____ ☐ Increase ☐ Decrease

5. Broilers = _____ ☐ Increase ☐ Decrease

THE LIVESTOCK INDUSTRY UNIT I

ASSIGNMENT SHEET #4 — ANALYZE THE EFFECT OF THE LIVESTOCK INDUSTRY ON COUNTY AND STATE ECONOMIES

NAME _____ SCORE _____

Livestock production in Oklahoma is very important to the state and county economies.

The purpose of this assignment sheet is to help you see the effect that agriproduction has on state and county economies. Use the current edition of *Oklahoma Agricultural Statistics* to plot the value for the following types of livestock.

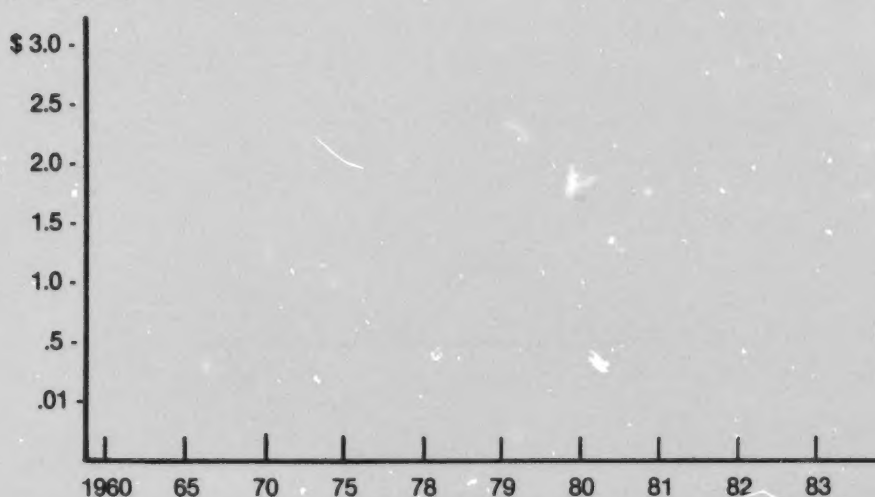
PART I

Plot the following information on the graphs provided.

A. All cattle and calves

Year	Dollar Values	Year	Dollar Values
1960	\$ 401,982,000	1979	\$1,881,500,000
1965	422,144,000	1980	2,447,500,000
1970	772,675,000	1981	2,079,000,000
1975	845,000,000	1982	1,856,000,000
1978	1,180,000,000	1983	1,765,500,000

(In billions)

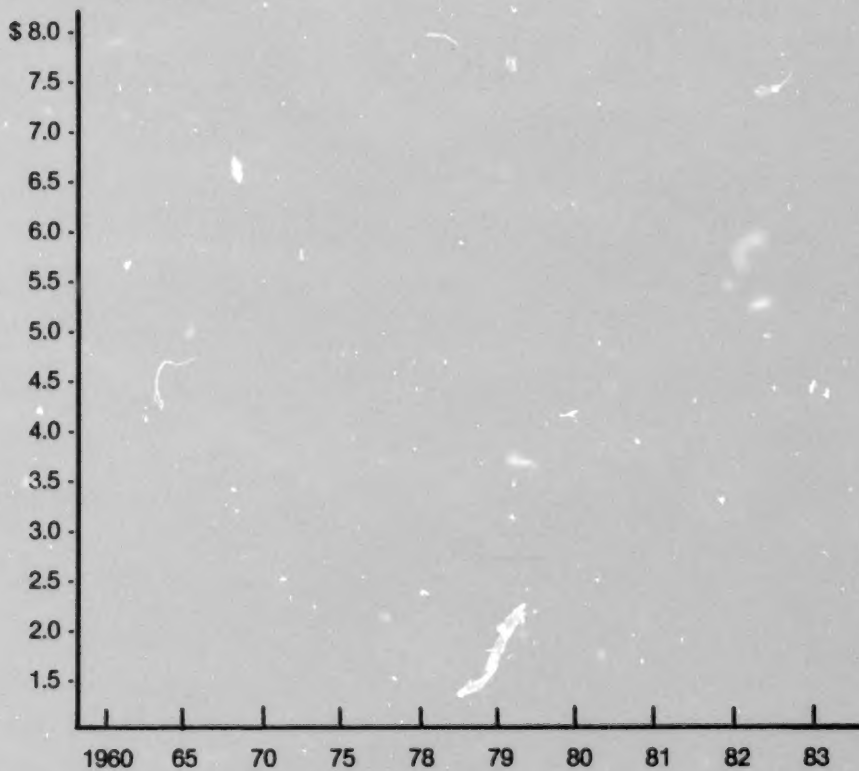


ASSIGNMENT SHEET #4

B. All sheep and lambs

Year	Dollar Values	Year	Dollar Values
1960	2,953,000	1979	4,984,000
1965	1,573,000	1980	6,836,000
1970	2,340,000	1981	6,555,000
1975	2,359,000	1982	6,720,000
1978	3,524,000	1983	7,547,000

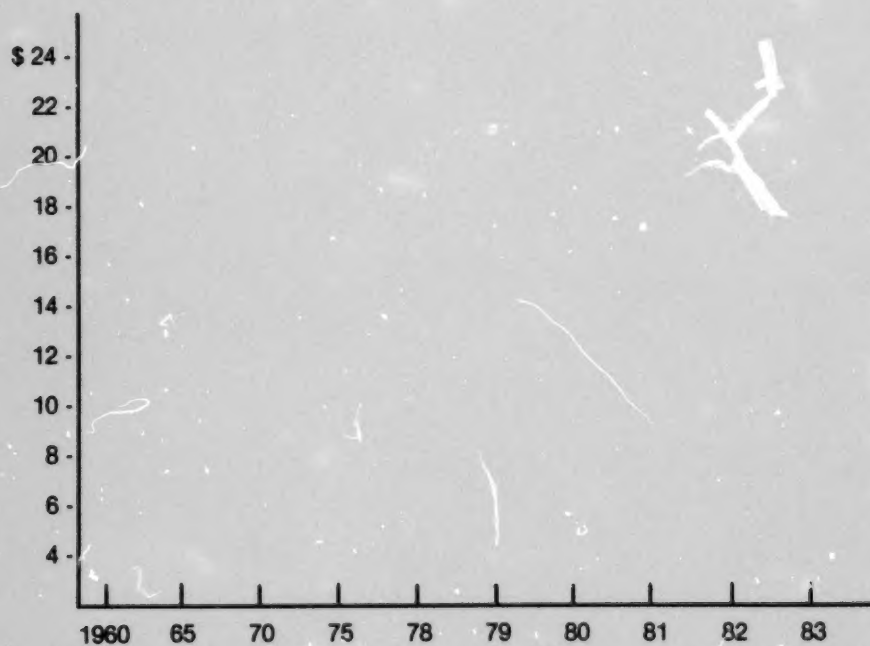
(in millions)



ASSIGNMENT SHEET #4

C. All hogs and pigs

Year	Dollar Values	Year	Dollar Values
1960	\$6,508,000	1979	\$18,315,000
1965	4,608,000	1980	20,125,000
1970	9,945,000	1981	15,435,000
1975	21,450,000	1982	14,670,000
1978	22,050,000	1983	

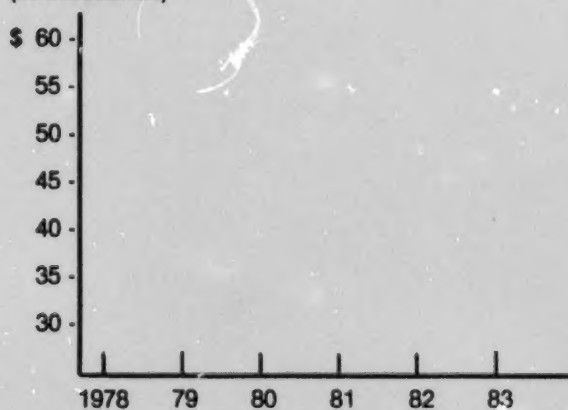


ASSIGNMENT SHEET #4

D. Broilers

Year	Dollar Values
1978	\$34,914
1979	38,754
1980	45,802
1981	56,054
1982	53,473
1983	

(in thousands)



PART II

Use information from Assignment Sheets #2 and #3 to answer the following questions.

- A. 1. In 1980, Oklahoma farmers received \$2,447,500,000 for their cattle. Was inventory up or down from the previous year? _____
2. Were prices considered to be up or down? _____

ASSIGNMENT SHEET #4

- B. 1. In 1983, Oklahoma farmers received \$7,547,000 for their lambs. Was inventory up or down from the previous year? _____
2. Were prices considered to be up or down? _____
- C. 1. In 1978, Oklahoma farmers received \$22,050,000 for their hogs. Was inventory up or down from the previous year? _____
2. Were prices considered to be up or down? _____
- D. How are the prices that farmers received affected by livestock inventory?
- _____
- _____
- _____

PART III

Use the current edition of the *Oklahoma Agricultural Statistics* to answer the following questions.

- A. How does livestock production in your county rank with that in other counties?
1. Sheep _____
2. Cattle _____
3. Dairy _____
4. Hogs _____
5. All cattle and calves _____
6. Broilers _____
- B. How many head of livestock are recorded in your county as of January 1, 19____?
1. All cattle and calves _____
2. Beef cows _____
3. Milk cows _____

ASSIGNMENT SHEET #4

4. All sheep and lambs _____
5. All hogs and pigs _____
6. Broilers _____

PART IV

Select an enterprise that is important in your county. Discuss why you think it is important, why other enterprises are less important, and so on.

THE LIVESTOCK INDUSTRY
UNIT I

ANSWERS TO ASSIGNMENT SHEETS

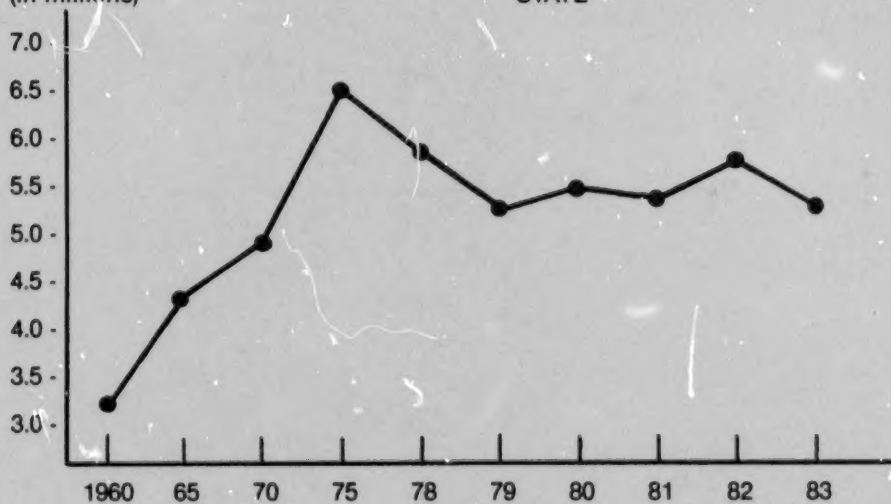
Assignment Sheet #1

PART I

A. All cattle and calves

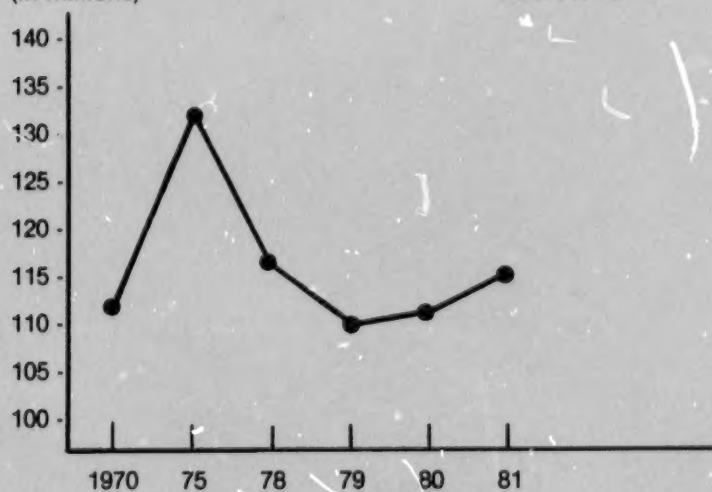
(in millions)

STATE



(in millions)

NATIONAL

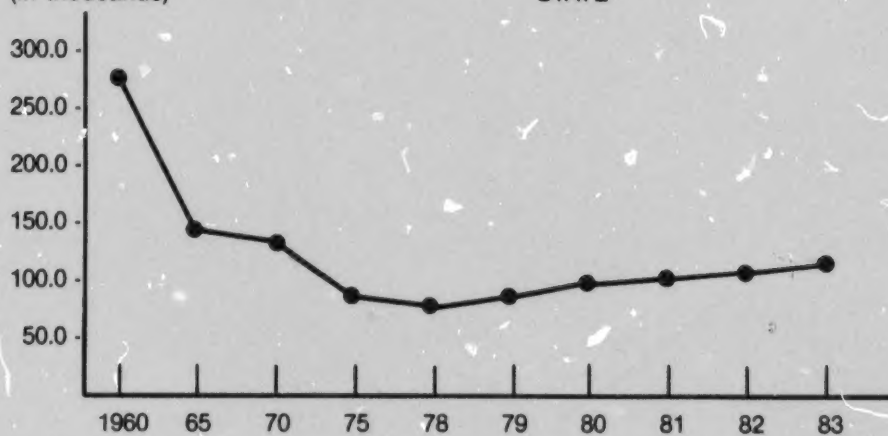


ANSWERS TO ASSIGNMENT SHEETS

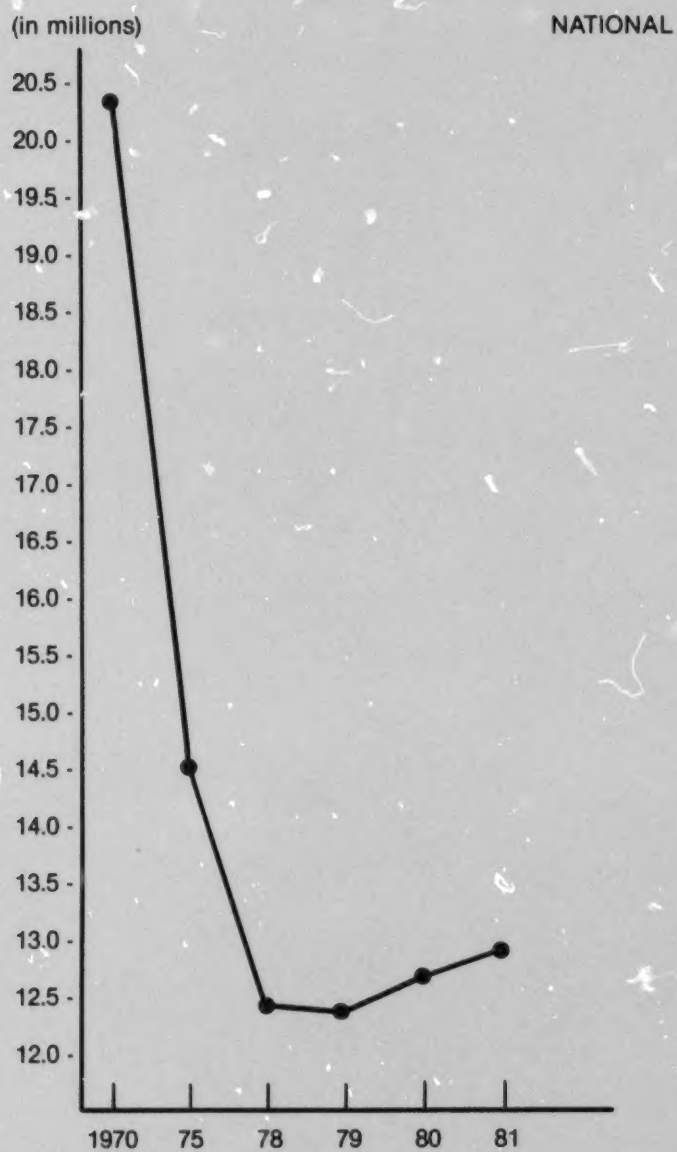
B. All sheep and lambs

(in thousands)

STATE



ANSWERS TO ASSIGNMENT SHEETS

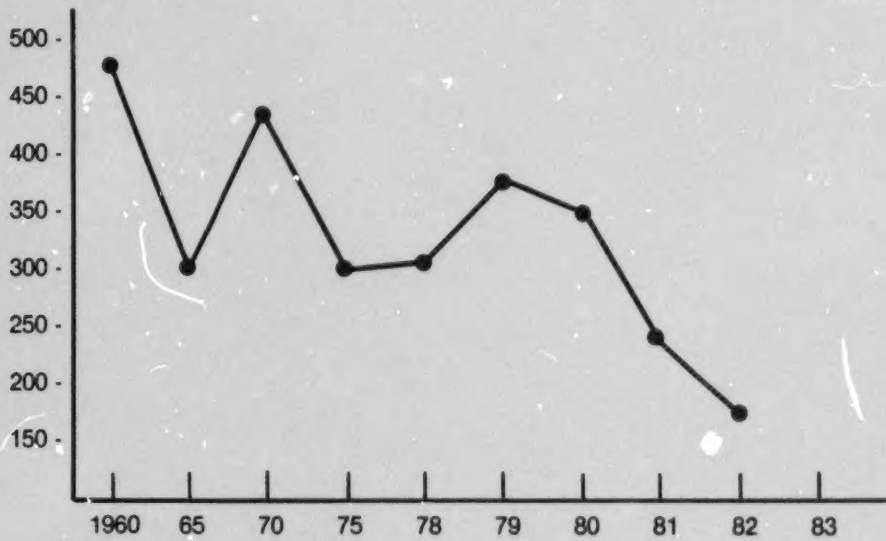


ANSWERS TO ASSIGNMENT SHEETS

C. Hogs

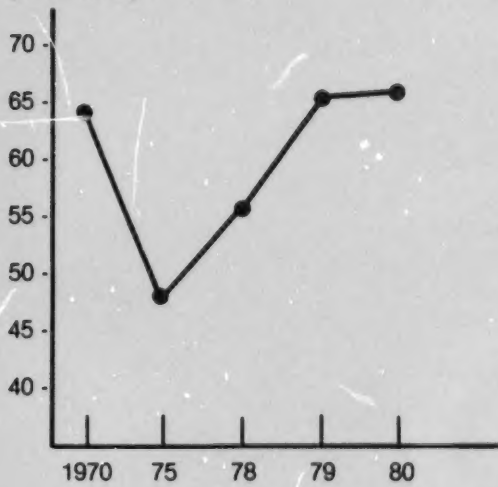
(in thousands)

STATE



(in millions)

NATIONAL



ANSWERS TO ASSIGNMENT SHEETS

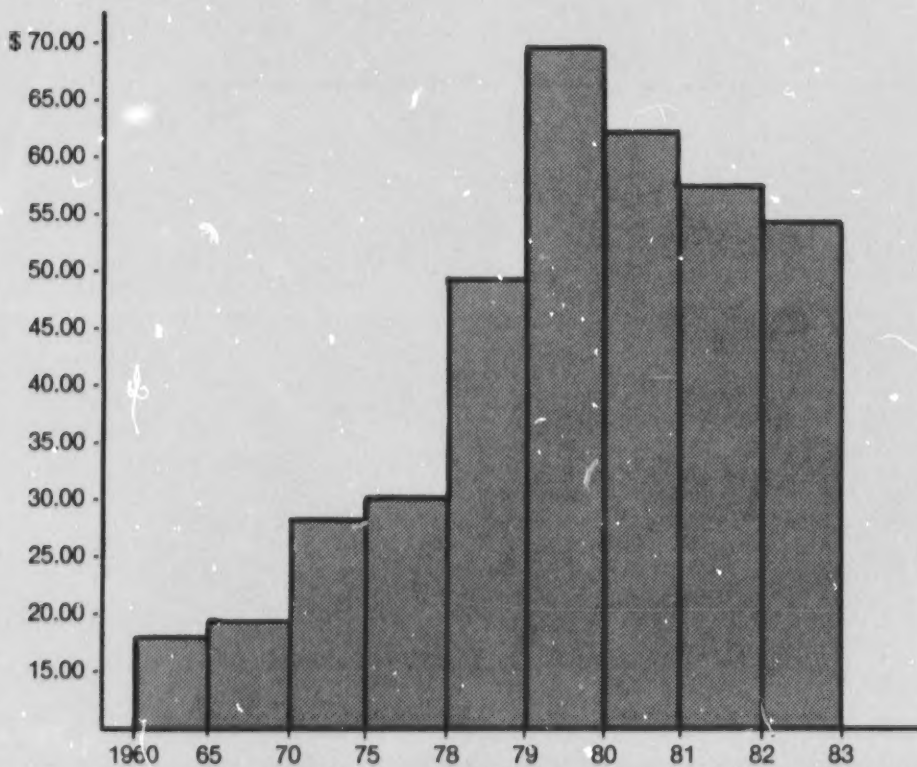
PART II

- A. 1975
- B. Evaluated to the satisfaction of the instructor
- C. When supply of inventory goes up, prices usually decrease; when supply of inventory goes down, prices usually increase
- D. 1960
- E. Evaluated to the satisfaction of the instructor
- F. 1960
- G. Evaluated to the satisfaction of the instructor

Assignment Sheet #2

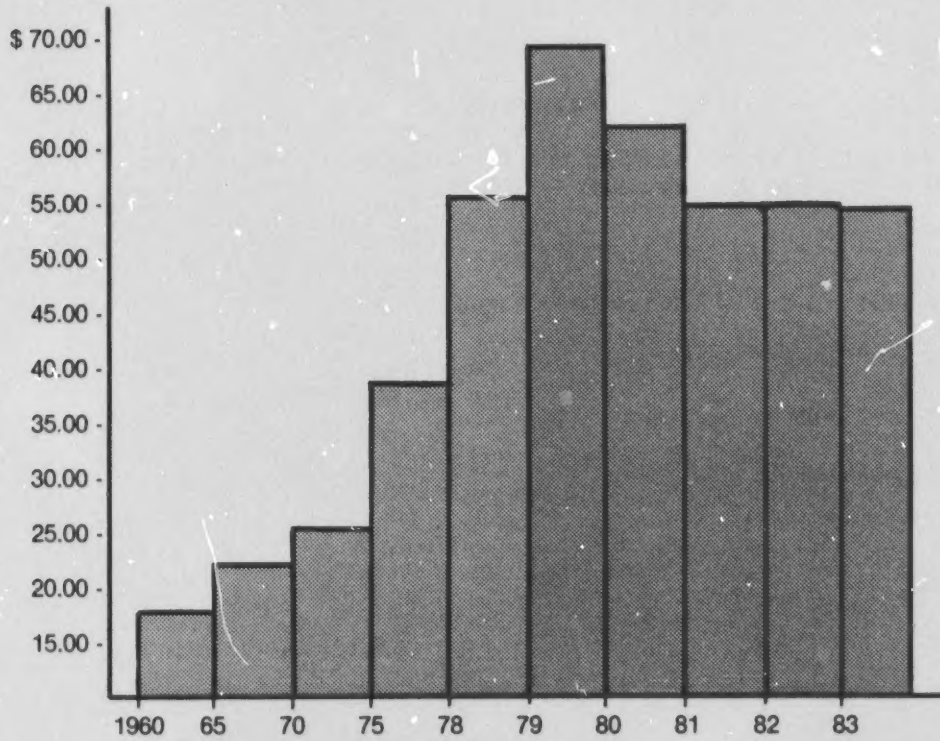
PART I

A. Cattle



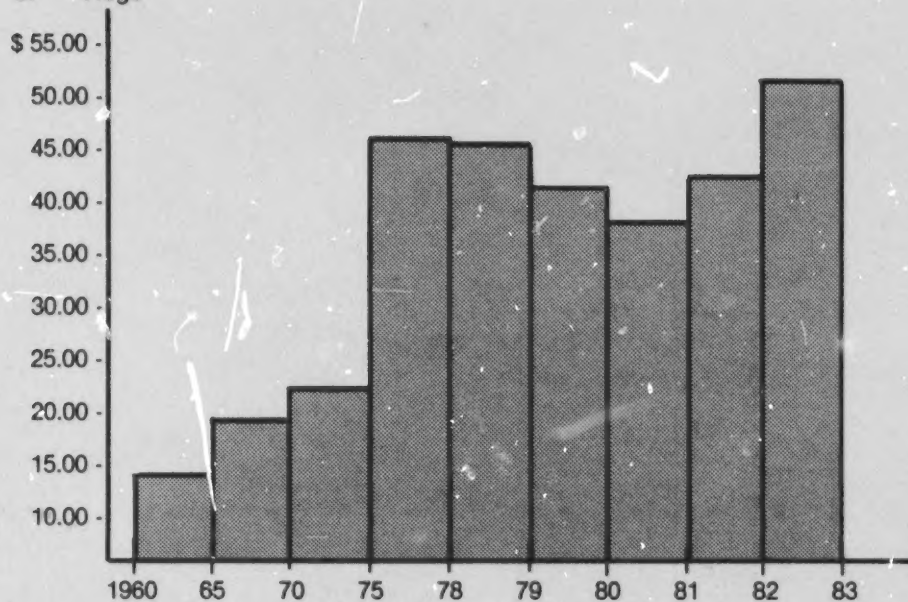
ANSWERS TO ASSIGNMENT SHEETS

B. Lambs

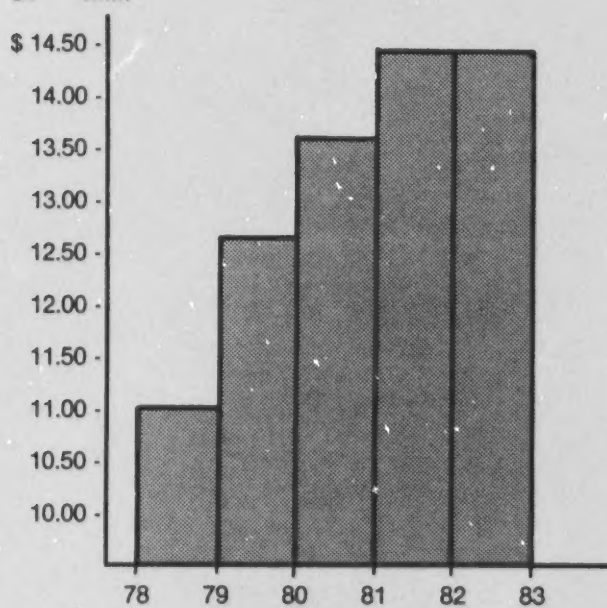


ANSWERS TO ASSIGNMENT SHEETS

C. Hogs

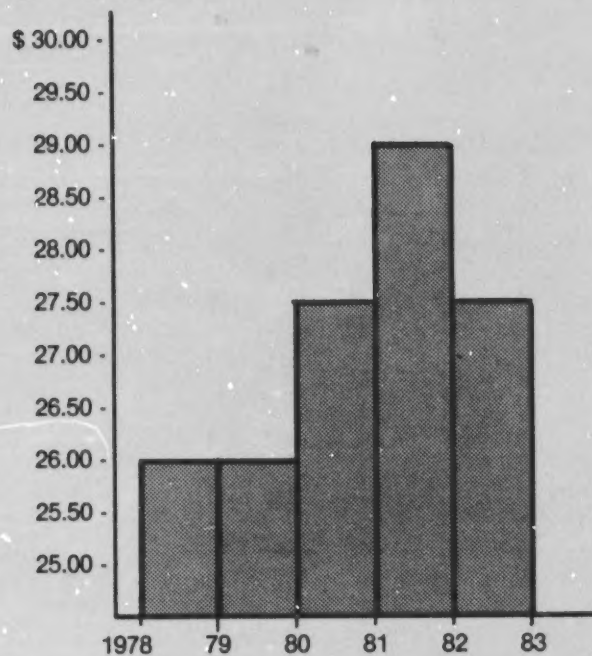


D. Milk



ANSWERS TO ASSIGNMENT SHEETS

E. Broilers



PART II

A. 1. 1979

2. Down

B. 1. 1979

2. Down

C. 1. 1982

2. Down

D. 1981-82

E. 1981

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #3

PART I

	Year	Price
A.	1. 1979	\$69.90/cwt
	2. 1979	\$69.40/cwt
	3. 1982	\$50.80/cwt
	4. 1981-82	\$14.40/cwt
	5. 1981	\$29.00/cwt

- B.
1. \$54.10/cwt
 2. \$56.10/cwt
 3. \$50.80/cwt
 4. \$14.40/cwt
 5. \$27.50/cwt

- C. Evaluated to the satisfaction of the instructor

PART II — Evaluated to the satisfaction of the instructor

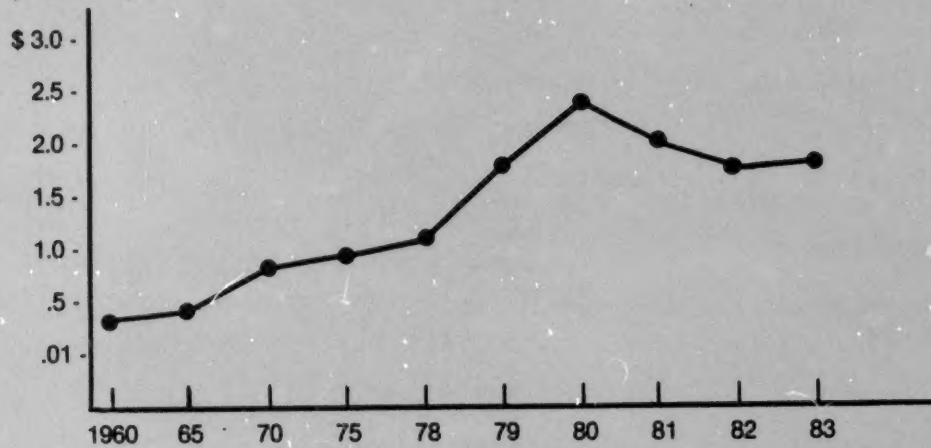
ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #4

PART I

A. All cattle and calves

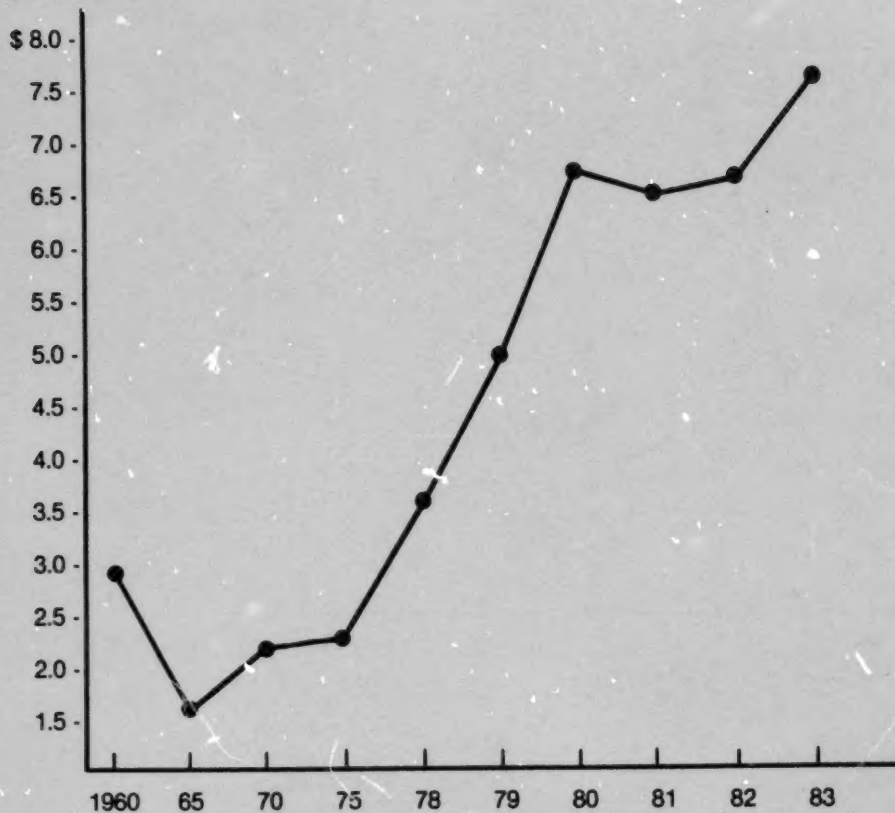
(in billions)



ANSWERS TO ASSIGNMENT SHEETS

B. All sheep and lambs

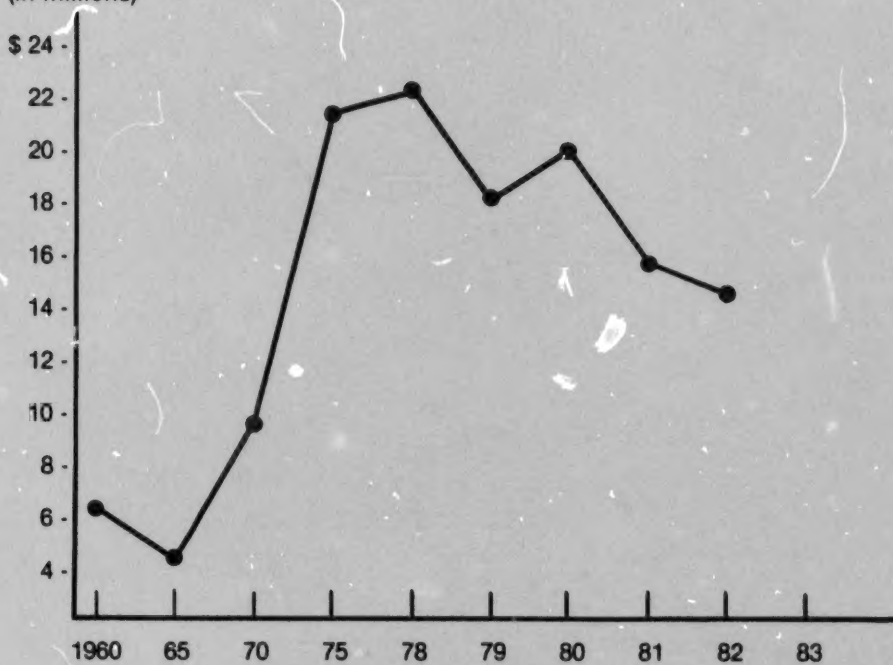
(in millions)



ANSWERS TO ASSIGNMENT SHEETS

C. All hogs and pigs

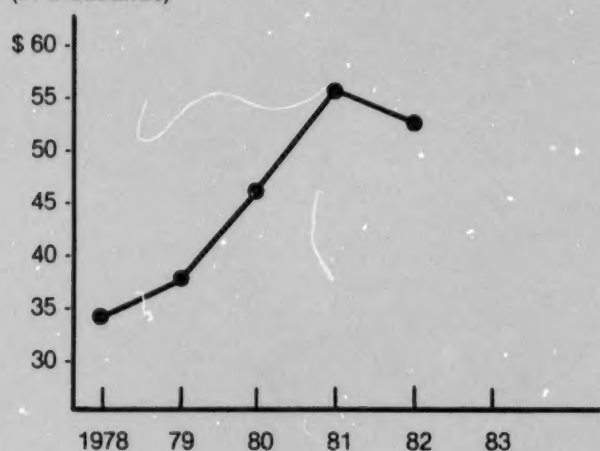
(in millions)



ANSWERS TO ASSIGNMENT SHEETS

D. Broilers

(in thousands)



PART II

- A. 1. Up
2. Down

- B. 1. Up
2. Down

- C. 1. Up
2. Down

- D. In most instances when inventory numbers are up, prices are down

PART III — Evaluated to the satisfaction of the instructor

PART IV — Evaluated to the satisfaction of the instructor

THE LIVESTOCK INDUSTRY
UNIT I

TEST

NAME _____

SCORE _____

1. Match to their correct definitions terms associated with the livestock industry. Write the correct numbers in the blanks. Definitions are continued on the next page.

- | | | |
|---------|---|--------------------------|
| _____a. | Process of growing agricultural products | 1. Commodity |
| _____b. | Direction of movement of a commodity in terms of production and prices | 2. Trends |
| _____c. | Beef animals that are to be placed on pasture for further growth | 3. Veal |
| _____d. | Individuals and companies involved in production, processing, and distribution of farm products | 4. Cycle |
| _____e. | Product of agriculture | 5. Supply |
| _____f. | Meat from a sheep | 6. Beef |
| _____g. | Consumers' desire to purchase certain commodities at a certain volume | 7. Consumer |
| _____h. | Individual who uses agricultural products | 8. Processing |
| _____i. | Beef animals that have been grown on grass and are ready for the feedlot | 9. Feeder cattle |
| _____j. | Recurring change in price and production of agricultural commodities | 10. Distribution |
| _____k. | Meat from a young calf | 11. Slaughter cattle |
| _____l. | Amount of a commodity available for the day's trading market | 12. Production |
| _____m. | Preparing farm products for use | 13. Stocker cattle |
| _____n. | Process by which agricultural products are made available to the consumer | 14. Agriculture industry |
| | | 15. Lamb |
| | | 16. Demand |

TEST

- ____o. Meat from cattle
- ____p. Steers or helpers that have been fed over one-hundred days in a feedlot and are ready for processing
2. Arrange in order the phases of agricultural enterprises. Write a "1" before the first phase, a "2" before the second phase, and so on.
- ____a. Distribution
- ____b. Production
- ____c. Consumption
- ____d. Processing
3. List the six major types of livestock produced in Oklahoma.
- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____
4. Identify the top five states that lead production in each livestock enterprise. Write an "X" in the blank before each correct answer.

Beef cattle

- | | |
|---------------------|------------------|
| ____a. Nebraska | ____f. Texas |
| ____b. Kansas | ____g. Missouri |
| ____c. South Dakota | ____h. Wisconsin |
| ____d. California | ____i. Oklahoma |
| ____e. Minnesota | ____j. Iowa |

TEST

Dairy cattle

- ____a. New York
- ____b. California
- ____c. Iowa
- ____d. Illinois
- ____e. Michigan

- ____f. Pennsylvania
- ____g. Wisconsin
- ____h. Ohio
- ____i. Minnesota
- ____j. Texas

Swine

- ____a. Nebraska
- ____b. Kansas
- ____c. Indiana
- ____d. Ohio
- ____e. Georgia

- ____f. Missouri
- ____g. North Carolina
- ____h. Illinois
- ____i. Iowa
- ____j. Minnesota

Sheep

- ____a. Wyoming
- ____b. Idaho
- ____c. New Mexico
- ____d. Colorado
- ____e. Utah

- ____f. California
- ____g. Montana
- ____h. Texas
- ____i. South Dakota
- ____j. Arizona

Horses

- ____a. California
- ____b. Oklahoma
- ____c. Texas
- ____d. Wisconsin
- ____e. Alabama

- ____f. Maine
- ____g. Montana
- ____h. Illinois
- ____i. Alaska
- ____j. Louisiana

Poultry

- ____a. Arkansas
- ____b. Georgia
- ____c. Rhode Island
- ____d. California

- ____e. New Jersey
- ____f. Oklahoma
- ____g. Alabama
- ____h. North Carolina

TEST

5. Arrange agricultural livestock commodities according to their production levels. Write a "1" before the highest, a "2" before the next highest, and so on.

- ____ a. Milk production
- ____ b. Poultry and eggs
- ____ c. Cattle and calves
- ____ d. Sheep and wool
- ____ e. Hogs and pigs

6. Match selected livestock products to average yearly American consumption per person. Write the correct numbers in the blanks.

- | | |
|--------------------|-------------------|
| ____ a. 114 pounds | 1. Dairy products |
| ____ b. 562 pounds | 2. Lamb |
| ____ c. 75 pounds | 3. Beef |
| ____ d. 70 pounds | 4. Pork |
| ____ e. 1.6 pounds | 5. Poultry |

7. State the 1983 distribution of the consumer's beef dollar.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

TEST

8. Match to their correct job descriptions occupational titles related to the livestock industry. Write the correct numbers in the blanks.

- | | | |
|---------|---|---------------------------|
| _____a. | Individual who performs any combination of tasks associated with feeding market cattle | 1. Farmhand or ranch hand |
| _____b. | Individual who injects female livestock with semen for breeding purposes | 2. Stocker producer |
| _____c. | Individual who performs any combination of tasks associated with the care of livestock or livestock facilities | 3. Commission agent |
| _____d. | Individual who purchases beef animals for farmers, feeders, or packing plants | 4. Rancher |
| _____e. | Individual who sells livestock to farmers and ranchers | 5. Veterinarian |
| _____f. | Individual who oversees tasks associated with preparing feed for livestock | 6. Artificial inseminator |
| _____g. | Individual who handles bidding during livestock sales | 7. Cattle buyer |
| _____h. | Individual who oversees tasks associated with feeding market cattle | 8. Feedmill operator |
| _____i. | Individual who oversees the daily operations of a farm or ranch | 9. Farm or ranch manager |
| _____j. | Individual who breeds and raises livestock for market, breeding stock, or show | 10. Feedlot manager |
| _____k. | Individual who drives a rig and transports livestock, feed, and other products | 11. Auctioneer |
| _____l. | Individual who purchases cattle for grazing on wheat and/or pasture, and who then markets the cattle before they reach slaughter weight | 12. Feedlot employee |
| _____m. | Individual who doctors and treats sick animals | 13. Truck driver |

TEST

(NOTE: Test questions 9-12 list the assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

9. Interpret general trends in the livestock industry.
10. Interpret price changes in the livestock industry.
11. Calculate percentage of price increase or decrease for agricultural products.
12. Analyze the effect of the livestock industry on county and state economies.

THE LIVESTOCK INDUSTRY
UNIT I

ANSWERS TO TEST

- | | | | | |
|----|----|----|----|----|
| 1. | a. | 12 | i. | 9 |
| | b. | 2 | j. | 4 |
| | c. | 13 | k. | 3 |
| | d. | 14 | l. | 5 |
| | e. | 1 | m. | 8 |
| | f. | 15 | n. | 10 |
| | g. | 16 | o. | 6 |
| | h. | 7 | p. | 11 |

2. a. 3
b. 1
c. 4
d. 2

3. a. Beef cattle and calves
b. Dairy cattle and products
c. Swine
d. Sheep
e. Horses
f. Poultry

ANSWERS TO TEST

- | | | |
|----|--------------------|---------------------|
| 4. | Beef cattle | Dairy cattle |
| | a, b, f, g, j | a, b, f, g, i |
| | Swine | Sheep |
| | c, f, h, i, j | a, d, f, h, i |
| | Horses | Poultry |
| | a, b, c, g, h | a, b, d, g, h |

5. a. 2
b. 3
c. 1
d. 5
e. 4

6. a. 3
b. 1
c. 4
d. 5
e. 2

7. a. Rancher — 39.8¢
b. Retailer — 25.8¢
c. Feeder — 24.2¢
d. Packer/wholesaler — 6.3¢
e. Marketing — 3.9¢

ANSWERS TO TEST

- | | | | | |
|----|----|----|----|----|
| 8. | a. | 12 | h. | 10 |
| | b. | 6 | i. | 9 |
| | c. | 1 | j. | 4 |
| | d. | 7 | k. | 13 |
| | e. | 3 | l. | 2 |
| | f. | 8 | m. | 5 |
| | g. | 11 | | |

9. Evaluated to the satisfaction of the instructor
10. Evaluated to the satisfaction of the instructor
11. Evaluated to the satisfaction of the instructor
12. Evaluated to the satisfaction of the instructor

**BEEF BREEDS AND SELECTION
UNIT II****UNIT OBJECTIVE**

After completing this unit, the student should be able to identify and select beef breeds. The student should be able to judge beef cattle and give a set of oral reasons for placings. The student will show this knowledge by completing the assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with beef breeds and selection.
2. Identify major breeds of beef cattle.
3. Label the parts of a beef animal.
4. List factors to consider in selecting show animals.
5. List indicators of muscling.
6. List indicators of finish.
7. Label types of defective front and hind legs.
8. Select from a list characteristics of the ideal market steer.
9. List desirable characteristics of a cow.
10. List desirable characteristics of a bull.
11. Label wholesale cuts of beef with their proper names and desired percentages of total carcass yield.
12. Define *livestock judging*.
13. Match to their correct definitions terms associated with livestock judging.
14. Distinguish between selected beef-judging terms for desirable and undesirable traits.
15. State the purpose of the FFA placing card.
16. Compute placing scores.

OBJECTIVE SHEET

17. State the purpose of giving reasons for placings.
18. Arrange in order steps to follow in taking notes for oral reasons for placings.
19. Select from a list techniques for presenting oral reasons for placings.
20. Arrange in order steps to follow in presenting oral reasons for placings.
21. Evaluate characteristics of a cow.
22. Evaluate characteristics of a bull.
23. Evaluate sets of written reasons for placing classes of beef cattle.
24. Evaluate market steers.
25. Judge breeding classes of beef cattle.
26. Judge a market class of steers.
27. Write sets of reasons for placing classes of beef cattle.
28. Give a set of oral reasons for placing a class of beef cattle.
29. Use resource materials to locate information about beef cattle breeds.

BEEF BREEDS AND SELECTION UNIT II

SUGGESTED ACTIVITIES

I. Unit contents

A. Objective sheet

B. Suggested activities

C. Transparency masters

1. TM #1 — Parts of a Beef Animal
2. TM #2 — Indicators of Muscling
3. TM #3 — Indicators of Finish
4. TM #4 — Comparison of Correct and Defective Front Legs
5. TM #5 — Comparison of Correct and Defective Hind Legs
6. TM #6 — Substance of Bone and Set of Legs and Feet
7. TM #7 — Ideal Market Animal
8. TM #8 — Desirable Characteristics of a Cow
9. TM #9 — Desirable Characteristics of a Bull
10. TM #10 — Wholesale Cuts of Beef

D. Information sheet

E. Assignment Sheets

1. Assignment Sheet #1 — Identify Major Breeds of Beef Cattle
2. Assignment Sheet #2 — Label the Parts of a Beef Animal
3. Assignment Sheet #3 — Label Types of Defective Front and Hind Legs
4. Assignment Sheet #4 — Evaluate Characteristics of a Cow
5. Assignment Sheet #5 — Evaluate Characteristics of a Bull
6. Assignment Sheet #6 — Label Wholesale Cuts of Beef with Their Proper Names and Desired Percentages of Total Carcass Yield

SUGGESTED ACTIVITIES

7. Assignment Sheet #7 — Use Correct Beef-Judging Terms for Desirable and Undesirable Traits
8. Assignment Sheet #8 — Use FFA Placing Cards
9. Assignment Sheet #9 — Compute Placing Scores
10. Assignment Sheet #10 — Evaluate Sets of Written Reasons for Placing Classes of Beef Cattle
11. Assignment Sheet #11 — Evaluate Market Steers
12. Assignment Sheet #12 — Judge Breeding Classes of Beef Cattle
13. Assignment Sheet #13 — Judge a Market Class of Steers
14. Assignment Sheet #14 — Write Sets of Reasons for Placing Classes of Beef Cattle
15. Assignment Sheet #15 — Give a Set of Oral Reasons for Placing a Class of Beef Cattle
16. Assignment Sheet #16 — Use Resource Materials to Locate Information About Beef Cattle Breeds

F. Answers to assignment sheets

G. Test

H. Answers to test

II. Instructor's guide

A. Obtain materials to supplement unit.

1. Books

- a. *Modern Breeds of Livestock* by Hilton M. Briggs and Dinus M. Briggs. Available from Macmillan Publishing Company, Inc., 866 Third Avenue, New York, New York 10022.

(NOTE: Order at least five copies to be used by the students while doing breed research.)

- b. *National Steer Symposium*. Order from Animal Science Department, Division of Agriculture, Oklahoma State University, Stillwater, Oklahoma 74078.

SUGGESTED ACTIVITIES

- c. *Beef Cattle Science* by M.E. Ensminger. Available from Interstate Printers and Publishers, Inc., 19-27 North Jackson Street, Danville, Illinois 61832.

(NOTE: Order at least five copies to be used by the students while doing breed research.)

- d. *OSU Livestock Judging Manual* by Jarold Callahan. Available from the OSU Bookstore, Student Union, Oklahoma State University, Stillwater, Oklahoma 74078.

(NOTE: Provide one copy for each pair of students to use while training judging teams.)

2. Breed promotional material

(NOTE: Each of the following breed associations offers free training materials. Materials can be ordered from the following addresses.)

- a. American Angus Association, 3201 Frederick Boulevard, St. Joseph, Missouri 64501, (816) 233-3101; breed publication: *The Angus Journal*.
- b. American Brahman Breeders Association, 1313 La Concha Lane, Houston, Texas 77054, (713) 795-4444; breed publication: *The Brahman Journal*.
- c. American Chianina Association, P.O. Box 890, Platte City, Missouri 64079, (816) 431-2808; breed publication: *The American Chianina Journal*.
- d. American Gelbvieh Association, 5001 National Western Drive, Denver, Colorado 80216, (303) 296-9257; breed publication: *Gelbvieh Country*.
- e. American Hereford Association, 715 Hereford Drive, Kansas City, Missouri 64105, (816) 842-3757; breed publication: *American Hereford Journal*.
- f. American International Charolais Association, 10920 Ambassador Drive, Suite 419A, Box 20247, Kansas City, Missouri 64195, (816) 464-5977; breed publication: *The Charolais Journal*.
- g. American Maine-Anjou Association, 564 Livestock Exchange Building, Kansas City, Missouri 64102, (816) 474-9555; breed publication: *Maine-Anjou Journal*.

SUGGESTED ACTIVITIES

- h. American Polled Hereford Association, 4700 East 63rd Street, Kansas City, Missouri 64130, (816) 333-7731; breed publication: *Polled Hereford World*.
 - i. American Red Poll Association, Box 35519, Louisville, Kentucky 40232, (502) 635-6540; breed publication: *Red Poll News*.
 - j. American Shorthorn Association, 8288 Hascall Street, Omaha, Nebraska 68124, (402) 393-7200; breed publication: *Shorthorn Country*.
 - k. American Simmental Association, Inc., 1 Simmental Way, Bozeman, Montana 59715, (406) 587-4531, breed publication: *Simmental Shield*.
 - l. Beefmaster Breeders Universal, GPM S. Tower, Suite 350, 800 Northwest Loop 410, San Antonio, Texas 78216, (512) 341-1277, breed publication: *The Cowman*.
 - m. International Brangus Breeders Association, Inc., 9500 Tioga Drive, San Antonio, Texas 78230, (512) 696-8231; breed publication: *The Brangus Journal*.
 - n. Red Angus Association of America, 4201 I-35, North Denton, Texas 76201, (817) 387-3502; breed publication: *The American Red Angus*.
 - o. Santa Gertrudis Breeders International, P.O. Box 1257, Kingsville, Texas 78363, (512) 592-9357; breed publication: *The Santa Gertrudis Journal*.
 - p. North American Limousin Foundation, 100 Livestock Exchange Building, Denver, Colorado 80216, (303) 296-8835.
3. Slides
- a. *American Simmental*, 41 color slides. Available for loan or purchase from the American Simmental Association, Inc., 1 Simmental Way, Bozeman, Montana 59715.
 - b. *Hereford Judging Class*. 24 color slides for four classes consisting of market steers, senior bull calves, spring yearling heifers, and show steer prospects. Available for loan or purchase from American Hereford Association, Department of Information, 715 Hereford Drive, Box 4059, Kansas City, Missouri 64101.

SUGGESTED ACTIVITIES

- c. *Judging Livestock*, 1983 FFA and 4-H Contest, Houston Livestock Show and Rodeo, 21 slides, two classes. Available for purchase from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.
- d. *Judging—Selection*, 40 slides. Available for free loan or purchase from American Maine-Anjou Association, 564 Livestock Exchange Building, Kansas City, Missouri 64102.
- e. *Livestock Breeds*, 42 slides. Available for purchase from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.

4. Films

- a. *The Changing Cowboy*. 16 mm, color, 28 minutes. Available for loan from the American Hereford Association, Department of Information, 715 Hereford Drive, P.O. Box 4059, Kansas City, Missouri 64101.
 - b. *Your First Step to Tomorrow*. 16 mm, color, 12 1/2 minutes. This film features Lonny Eastvoid, Hartland, Minnesota, the 1971 FFA Star Farmer of America. It explains the advantages of a beef heifer project. It also tells how to get the right start and shows some of the fun and excitement that goes along with feeding and showing a heifer and participating in farm youth activities.
 - c. *Angus in the U.S.—A Century of Progress*. 16 mm, color, 14 minutes. This film tells the story of George Grant's bringing the first Angus bulls to the United States, and then shows the official United States birthday party for Angus held May 17, 1973, in Victoria, Kansas. Available for loan from American Angus Association, Public Relations Department, 3201 Frederick Boulevard, St. Joseph, Missouri 64501.
- 5. FFA placing cards. Order from Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.
 - 6. Stenography notebooks. Purchase one stenography notebook for each class member. These 6-by-9-inch books are used when teaching students to take notes for giving reasons for their placings.

SUGGESTED ACTIVITIES

- B. Make or obtain transparencies.

(NOTE: Transparencies are available for purchase from the Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)

- C. Introduce unit.

SUGGESTIONS:

- Tell students that beef cattle production in Oklahoma contributes over \$1.5 billion to our economy yearly. In 1982, beef cattle ranked fifteenth when compared to all other agricultural commodities.
- Tell students that the Oklahoma City stockyard is considered to be the largest terminal in the country for stocker and feeder cattle.
- Show *The Changing Cowboy*. This film traces the history of the cowboy and the Hereford cattle that have been a part of our lives since the days of the longhorn. The film features ranchers from all over the United States, including the late John Wayne at his Arizona ranch.
- Stress the importance of foundation breeds such as the Hereford and Angus, and tell students how these breeds were used in a crossbreeding program.
- Introduce students to Assignment Sheet #16. This assignment sheet allows students to use reference materials to study different breeds of beef cattle. Review questions with students, and help the students locate reference materials. Establish a date that the assignment sheet should be completed.
- Have students write to the breed associations that interest them so that they may complete their research for Assignment Sheet #16.

- D. Provide students with objective sheet.
- E. Discuss unit and specific objectives.
- F. Provide students with information and assignment sheets.
- G. Discuss information and assignment sheets.

(NOTE: This unit contains sixteen assignment sheets. It is suggested that the assignment sheets be used in sequence.)

SUGGESTED ACTIVITIES

1. Make the terms in Section I of the Information Sheet meaningful by illustrating the meaning of each term as it is presented.

SUGGESTIONS:

- Use photographs and materials received from the different breed associations to discuss terms related to breed characteristics, type, and body structure.
- Use the photographs and materials to help students develop an understanding of such terms as *heifer*, *springer*, *cow*, *calf*, and *bull*.

2. Use Information Sheet, Section II and Assignment Sheet #1 to help students identify major breeds of beef cattle.

SUGGESTIONS:

- Show slides, *Livestock Breeds*, and discuss breed characteristics. Stress color pattern as well as body and head characteristics.
- Show slides, *American Simmental*, to help students to see how the Simmental breed crosses with other breeds.
- Show film, *Angus in the U.S.—A Century of Progress*.
- Develop a bulletin board, using pictures of the different breeds received from breed associations.

3. Use Section III of Information Sheet, Transparency #1, and Assignment Sheet #2 to help students learn to identify the parts of a beef animal. Stress the importance of calling the parts by their correct names. Students must use correct terminology when writing and giving oral reasons for their placings.

4. Use Information Sheet, Section IV to help students start thinking about factors to consider when selecting show animals.

SUGGESTIONS:

- Show film, *Your First Step to Tomorrow*. This film explains the advantages of a beef heifer project.
- Discuss performance and breeding records. Use the information received from the breed associations.
- Use an Oklahoma City or Tulsa State Fair catalog to help students learn to identify show classifications. To enhance the heifer's showing in her age class, it is important to know the show classifications prior to purchasing show heifers.

SUGGESTED ACTIVITIES

5. Use Information Sheet, Section V and Transparency #2 to help students learn to recognize indicators of muscling.

SUGGESTIONS:

- Remind students that muscle is the part of the beef animal that is eaten; the more muscling an animal has, the more meat there is to eat.
- Use pictures found in breed magazines to help students identify indicators of muscling.

6. Use Information Sheet, Section VI and Transparency #3 to help students recognize indicators of finish.

SUGGESTIONS:

- Tell students that the amount of marbling determines the quality grade of the animal. An animal has to have a 0.04-inch finish over the rib in order to grade "choice."
- Tell students that the optimum composition of a slaughter animal is 65 percent muscle, 23 percent fat, and 12 percent bone.
- Tell students that a carcass of 600 to 900 pounds (live weight 1,000 to 1,350 pounds) brings the highest market price.

7. Use Section VII of Information Sheet, Transparencies #4 through #6, and Assignment Sheet #3 to help students identify types of defective front and hind legs.

SUGGESTIONS:

- Stress with the students the importance of animals' having good, sound, correct feet and legs. Tell students that the legs are similar to a foundation of a house. When the foundation of the house cracks, the house cracks.
- Have students use breed magazines to collect pictures of animals that have defective legs.

8. Use Information Sheet, Section VIII and Transparency #7 to introduce the characteristics of the ideal market steer.

SUGGESTIONS:

- Use the *National Steer Symposium* booklet to develop discussion points regarding the ideal steer.

SUGGESTED ACTIVITIES

- Discuss the rate of gain and feed conversion. Use chalkboard and develop some problems related to the cost of feeding an animal that has good conversion as compared to the cost of feeding an animal that has poor conversion. Ask students to figure the cost of putting on a pound of weight when feed costs \$9.50 per hundredweight and the conversion rate is 7.0 pounds.
9. Use Sections IX and X of the Information Sheet, Transparencies #8 and #9, and Assignment Sheets #4 and #5 to help students evaluate desirable characteristics of a cow and a bull.

SUGGESTIONS:

- Use Transparencies #8 and #9 to point out important desirable characteristics of a cow and bull. Talk about such terms as *spring of rib*, *large bones*, *wide chest*, and *strong topline*. Provide students with ample examples and illustrations so that they may develop a basis for comparison.
 - Invite a breeder to talk to the class about characteristics he or she uses in selecting replacement bulls and cows.
10. Use Section XI of Information Sheet, Transparency #10, and Assignment Sheet #6 to help students learn to identify wholesale cuts of beef and their desired percentages of carcass value.

SUGGESTIONS:

- Review with the students the optimum carcass value of 65 percent muscle, 23 percent fat, and 12 percent bone.
 - Tell students that a good carcass animal should produce the maximum of the high-priced cuts and a very minimum of the less valuable bones and internal organs.
 - Explain to students the difference between wholesale and retail cuts.
11. Use Information Sheet, Section XII to stress the importance of learning to judge livestock.

SUGGESTIONS:

- Ask a vocational agriculture student from the senior class to talk to the students about livestock judging. Have the student state how judging has helped him or her.
- Ask a beef producer to talk to the class about how to analyze an animal's individual traits.

SUGGESTED ACTIVITIES

12. Use Information Sheet, Section XIII to help students learn to use terms in judging and selecting beef cattle.

SUGGESTIONS:

- Help students learn each term as it is presented by using selected slides from *Livestock Breeds* to illustrate the meanings of such terms as *trimness*, *scale*, *quality*, and *type*.
- Use photographs received from breed associations to help clarify terms.

13. Use Information Sheet, Section XIV and Assignment Sheet #7 to help students learn correct terminology for desirable and undesirable traits.

SUGGESTIONS:

- Tell students why the traits are classified as desirable or undesirable. Illustrate how the terms are used when evaluating an animal and making comparisons.
- Show students how to tie the terms into phrases. For example, "A nicely balanced heifer that had more evidence of muscling down her top and more volume through her quarter."
- Divide the class into two groups. Have one group be responsible for using terms for desirable traits and the other group be responsible for using terms for undesirable traits. When group using terms for desirable traits calls out a term, the group using terms for undesirable traits calls out the opposite term; then reverse the procedure.

14. Combine Information Sheet, Sections XV and XVI and Assignment Sheets #8 and #9 to help students learn to use FFA placing cards and how to compute placing scores.

SUGGESTIONS:

- Explain how the FFA placing card is used, its purpose, and how to fill it out correctly.
- Put an example on the chalkboard and have the students write the example on the card.
- Use the chalkboard and demonstrate how to compute placing scores.

SUGGESTED ACTIVITIES

15. Combine Information Sheet, Sections XVII and XVIII and Assignment Sheet #10 to teach the purpose of giving reasons for placings. Explain how to take notes for oral reasons and how to evaluate a set of reasons.

SUGGESTIONS:

- Record the written reasons for placings in Assignment Sheet #10, and play them back to the class. This activity will give the students an example of how oral reasons for placings should be given.
 - Tell students that learning to give oral reasons for their placings will improve their public-speaking ability.
 - Distribute stenographer's notebooks to the class. Put an example of a set of notes on the chalkboard, and have students copy the notes into their notebooks. Show students how to use abbreviations when taking notes.
16. Use Assignment Sheet #11 to help the students evaluate market steers.

SUGGESTIONS:

- Show slides of market steers and have students judge a class.
 - Discuss how the market types have changed. Use the illustrations in Assignment Sheet #11 to clarify points.
17. Use Assignment Sheets #12 and #13 to allow students to practice judging cattle. Use slides from Texas, or prepare slides using cattle available in community, or set up a class of live animals. Use Assignment Sheet #14 as a follow-up to Assignment Sheets #12 and #13.

SUGGESTIONS:

- Have the juniors and seniors put together two classes for the students to judge. Make sure that one class is a market class and the other is a breeding class.
- Tell students that they will take a set of notes on each class and that the next day they will write reasons for their placings on both classes, using Assignment Sheet #14.
- Use the juniors and seniors as reason-takers, and let the students give a set of oral reasons for their placings.

SUGGESTED ACTIVITIES

- Before judging the live classes, have students judge the classes reviewed from the Hereford Association or the American Maine-Anjou Association.
18. Combine Information Sheet, Sections XIX and XX and Assignment Sheet #15 to teach students how to present oral reasons for placing beef cattle.

SUGGESTIONS:

- Ask a junior or senior vocational agriculture student to give a set of reasons for placings to the class. Have the students use Section XIV of the information sheet to see if the individual used the correct terminology in presenting the reasons.
 - Invite a university student involved in judging to demonstrate the present acceptable style of giving oral reasons for placings.
19. Collect and discuss Assignment Sheet #16.

SUGGESTION:

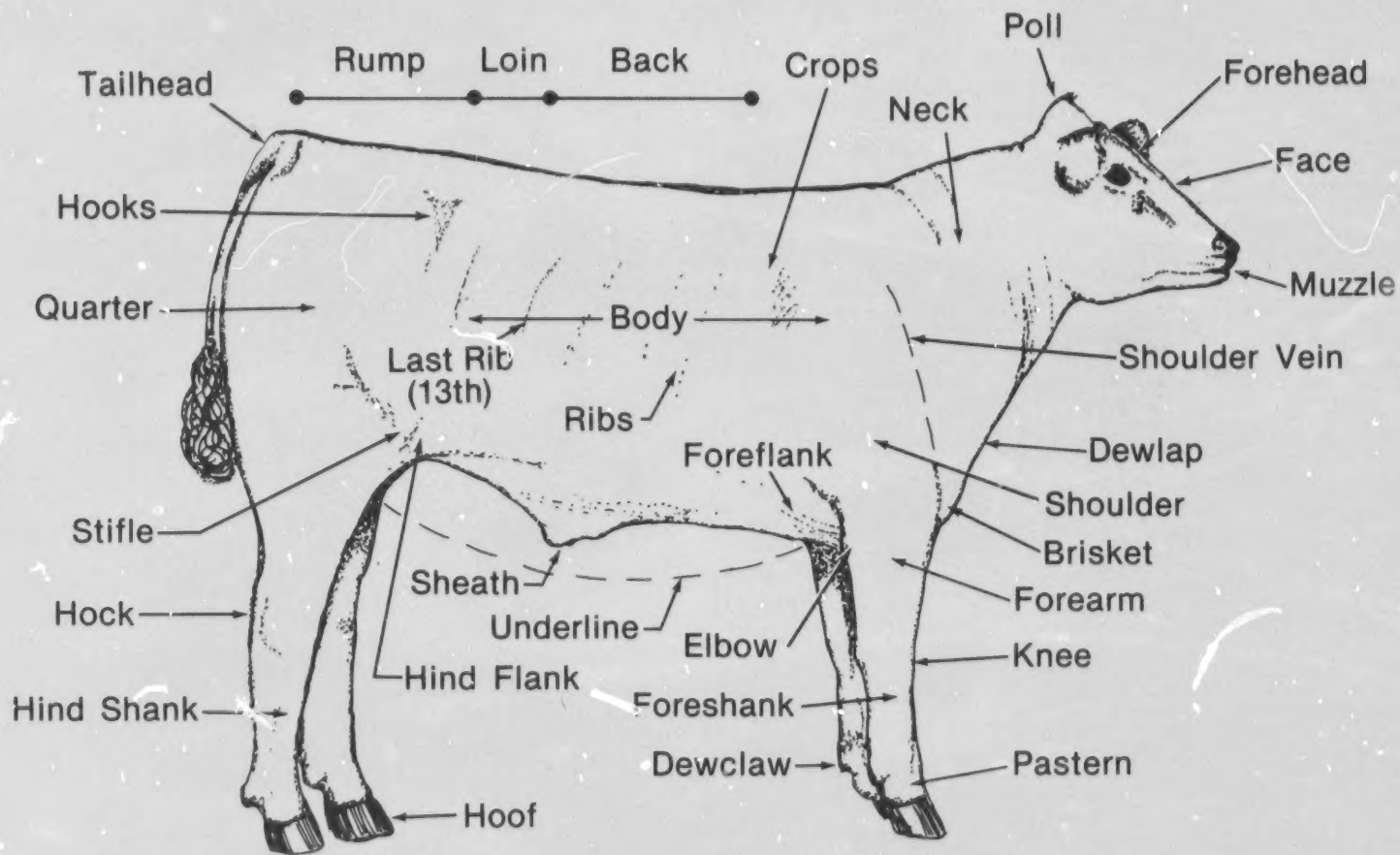
- Have students give oral reports on their research and breed selections.

H. Give test.

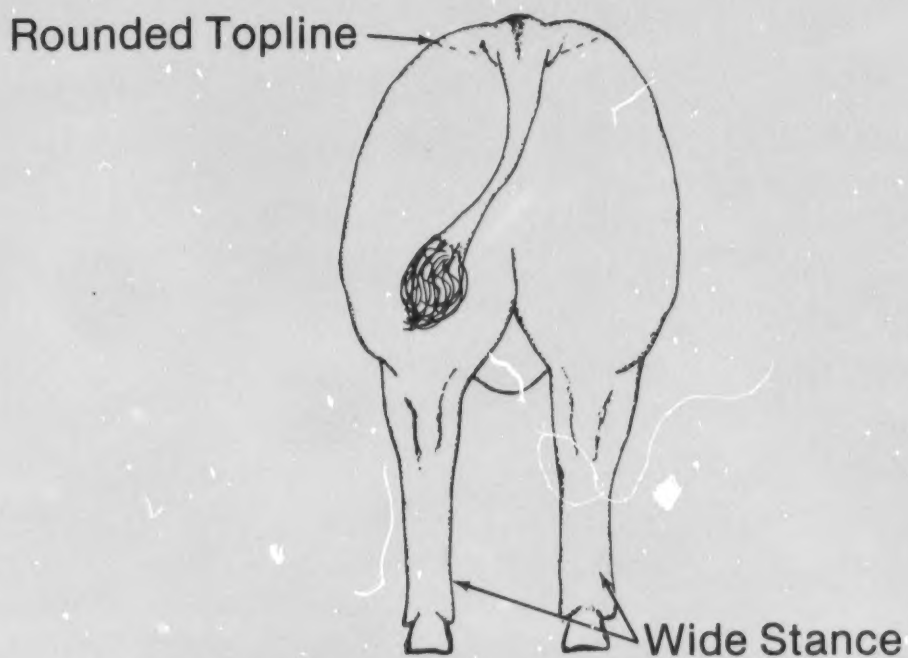
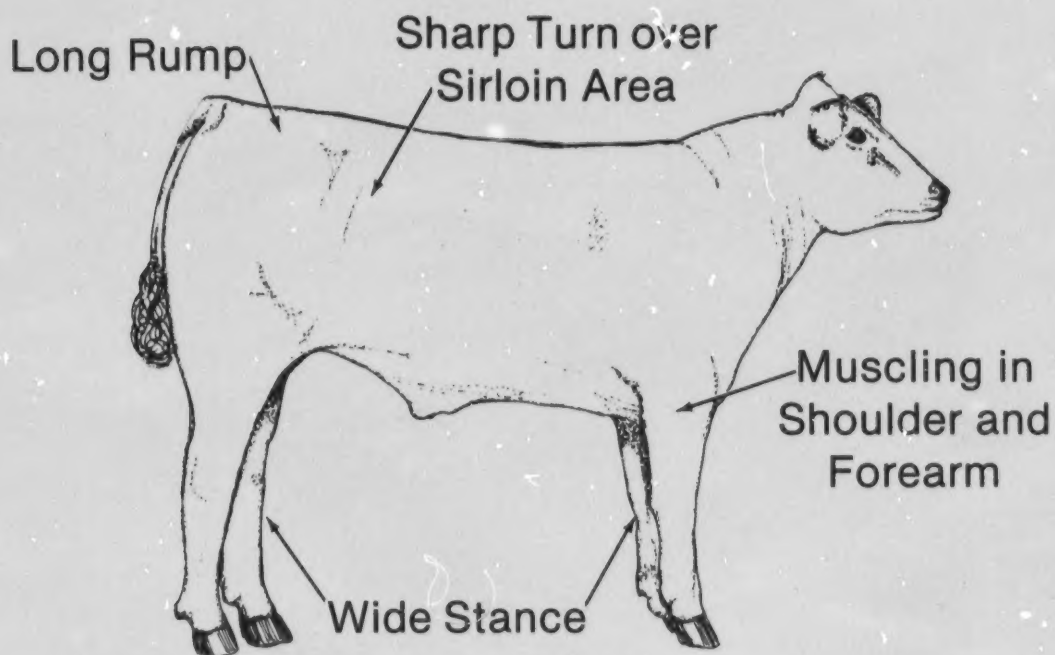
III. Unit references

- A. Briggs, Hilton M., and Dinus M. *Modern Breeds of Livestock*. New York: McMillan Publishing Co., Inc., 1980.
- B. Callahan, Jarold. *OSU Livestock Judging Manual*. Stillwater, Oklahoma: Oklahoma State University, 1982.
- C. *National Steer Symposium Report*. Stillwater, Oklahoma: Oklahoma State University, 1983.
- D. Ensminger, M.E. *Beef Cattle Science*. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1976.

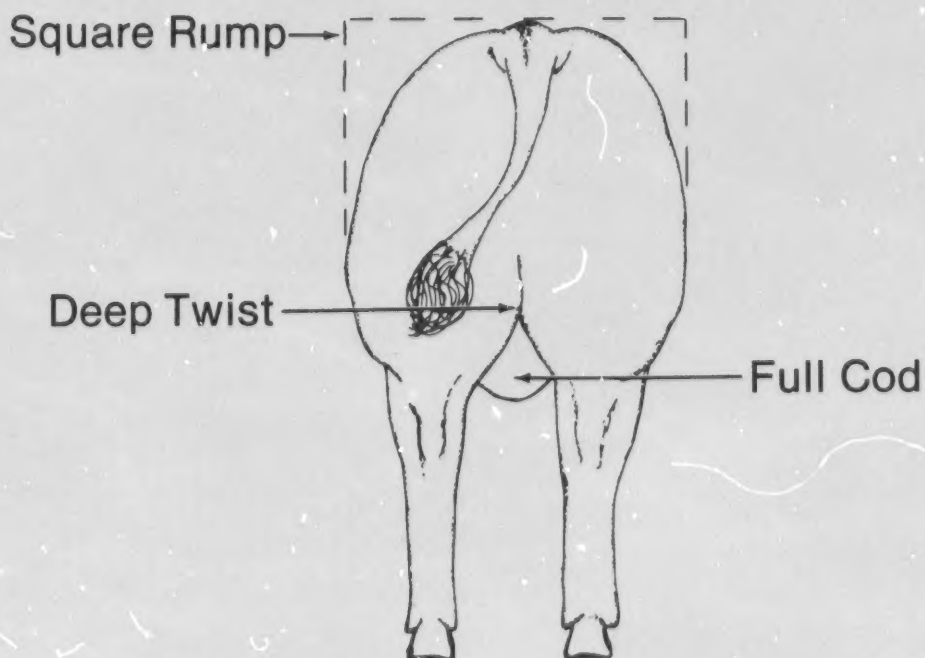
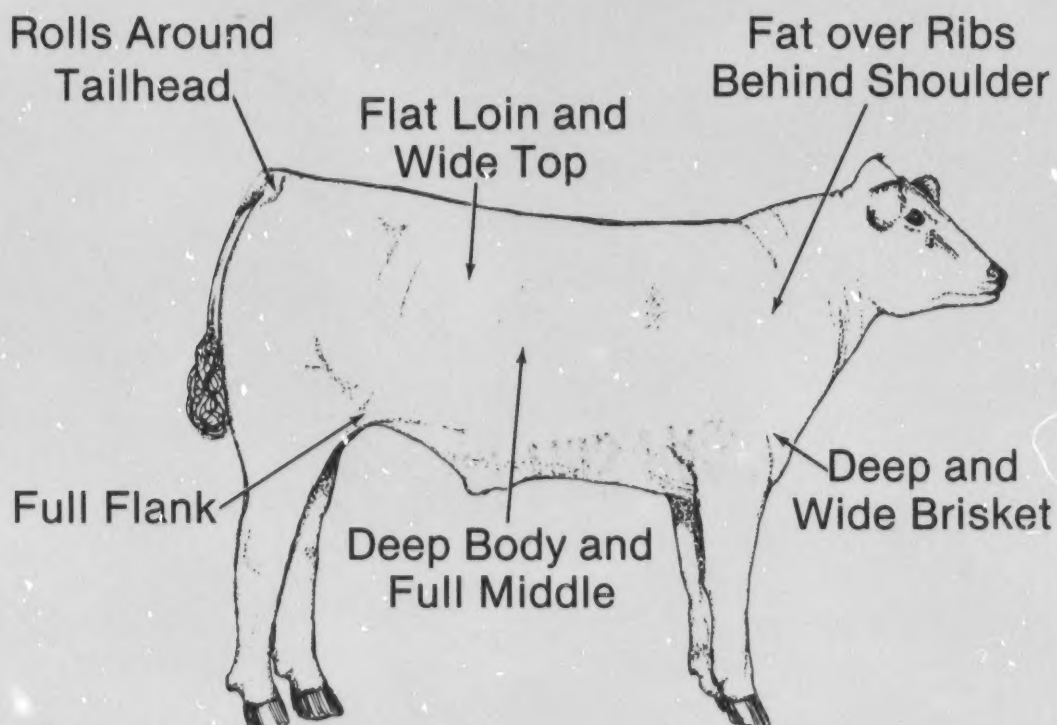
Parts of a Beef Animal



Indicators of Muscling



Indicators of Finish



Comparison of Correct and Defective Front Legs



Correct



Splay Footed



Toed In



Correct



Calf Kneed



Buck Kneed

Used with permission of Texas Vocational Instructional Services.

Comparison of Correct and Defective Hind Legs



Correct



Out in
the Hocks



Cow Hocked



Correct



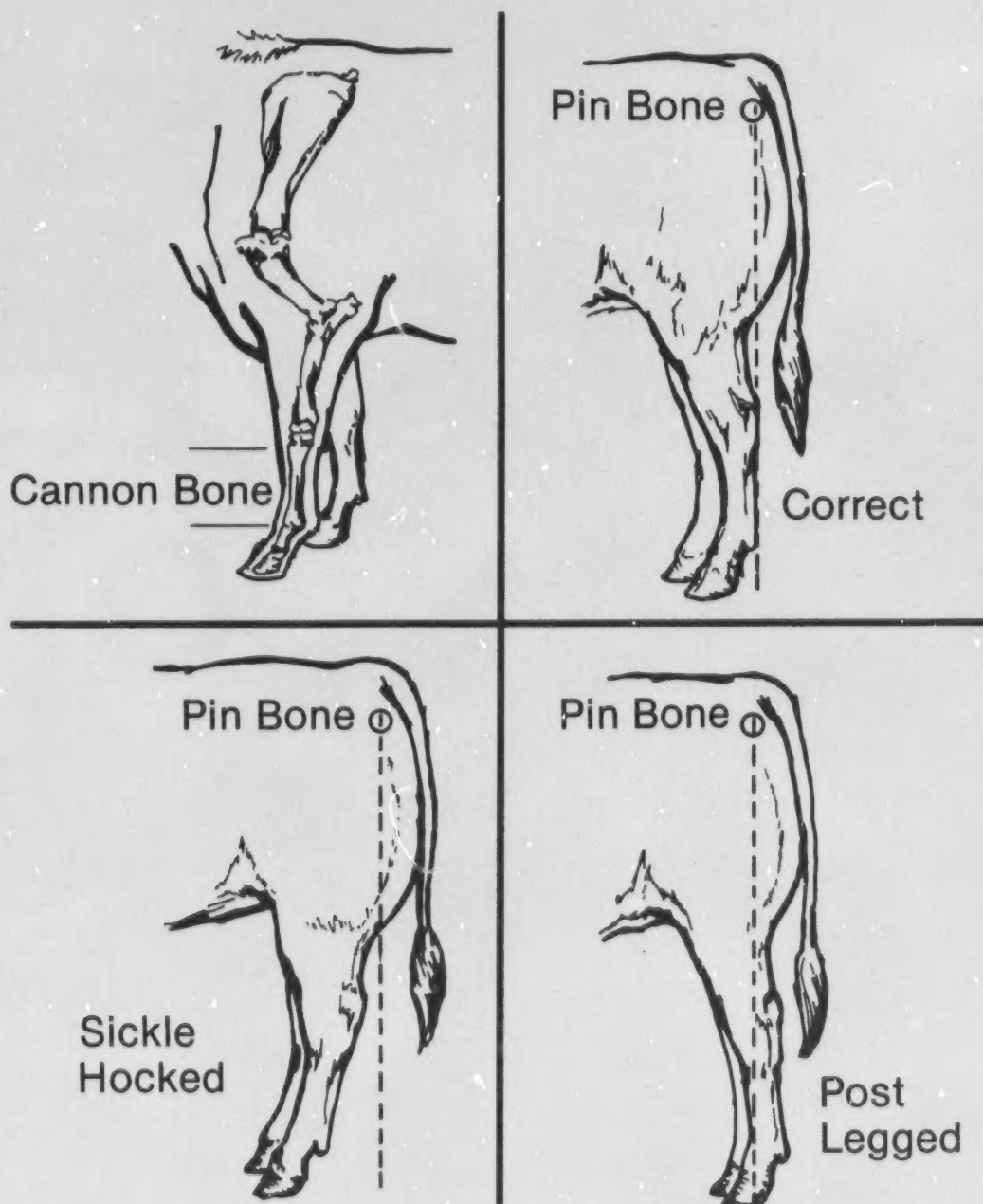
Post Legged



Sickle Hocked

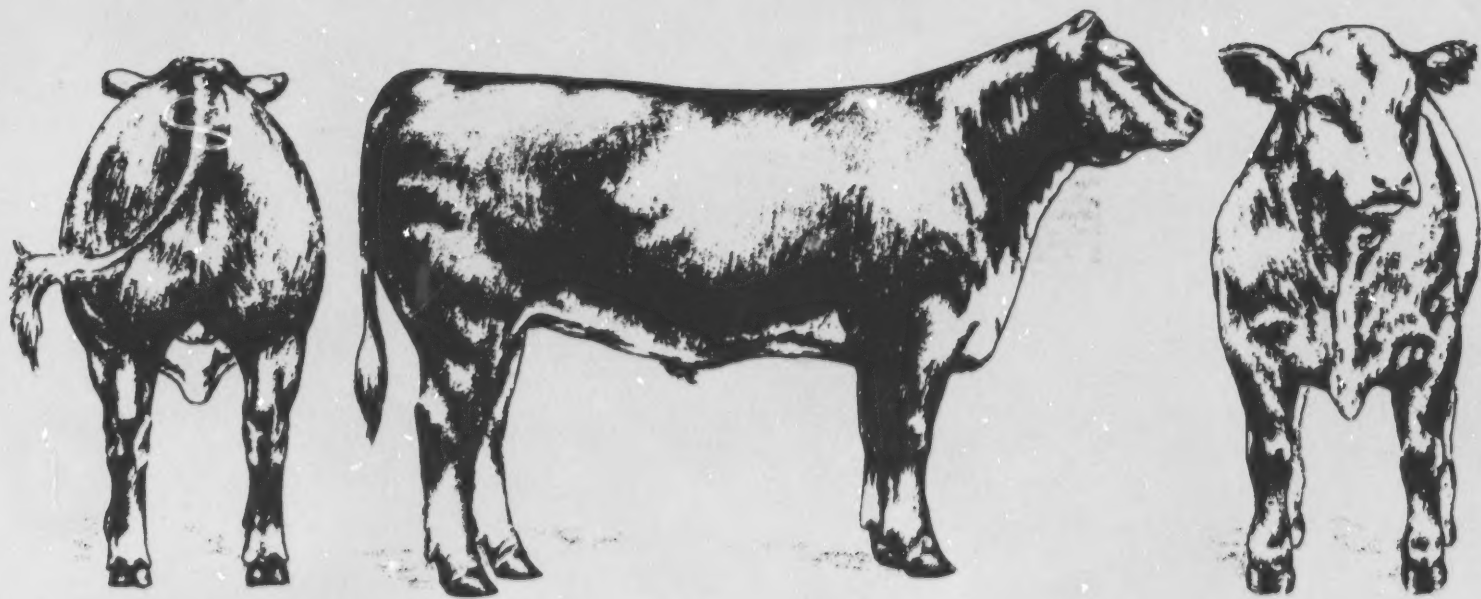
Used with permission of Texas Vocational Instructional Services.

Substance of Bone and Set of Legs and Feet



Used with permission of Texas Vocational Instructional Services.

Ideal Market Animal

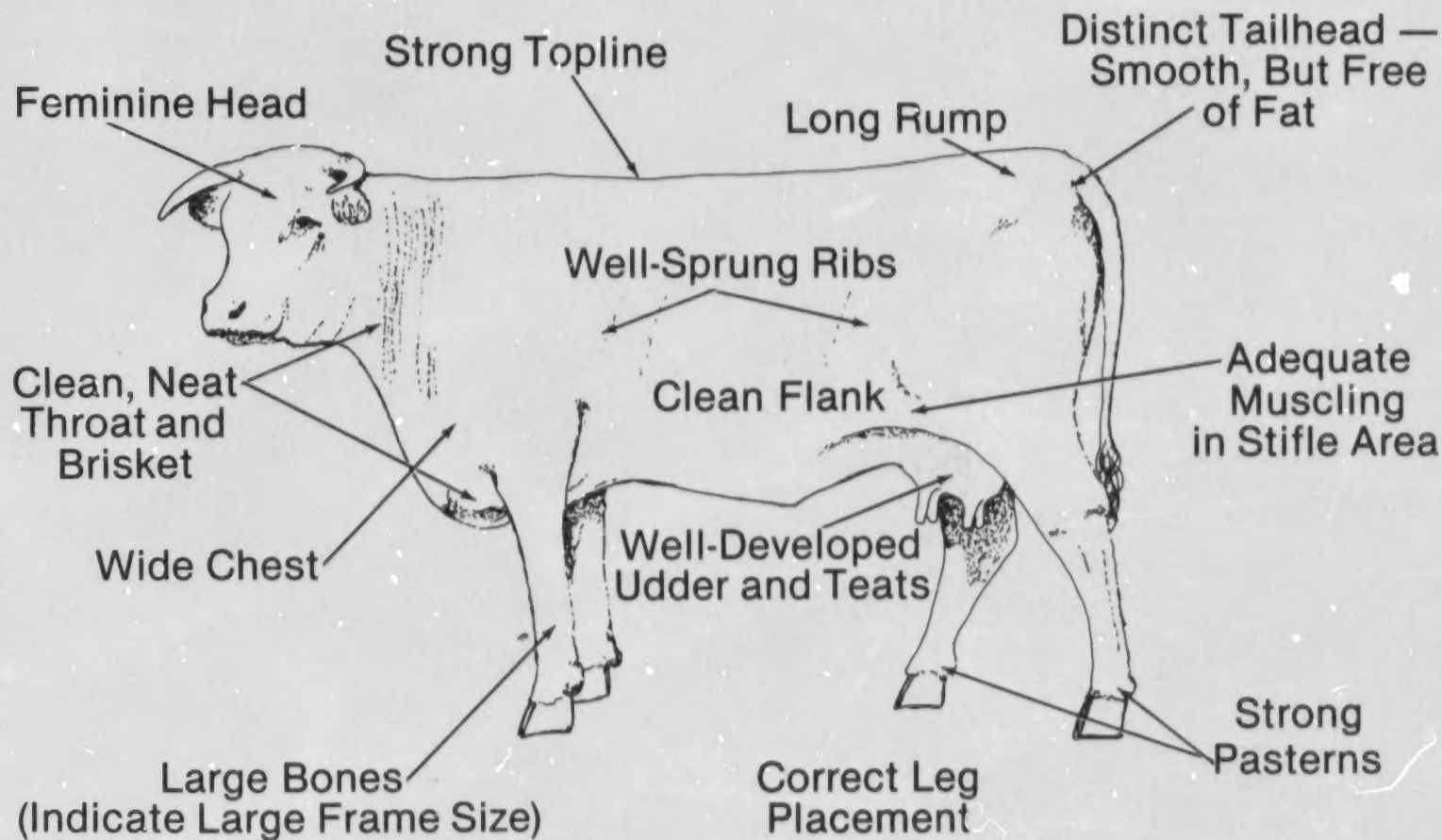


Used with permission of the Idaho State Board for Vocational Education.

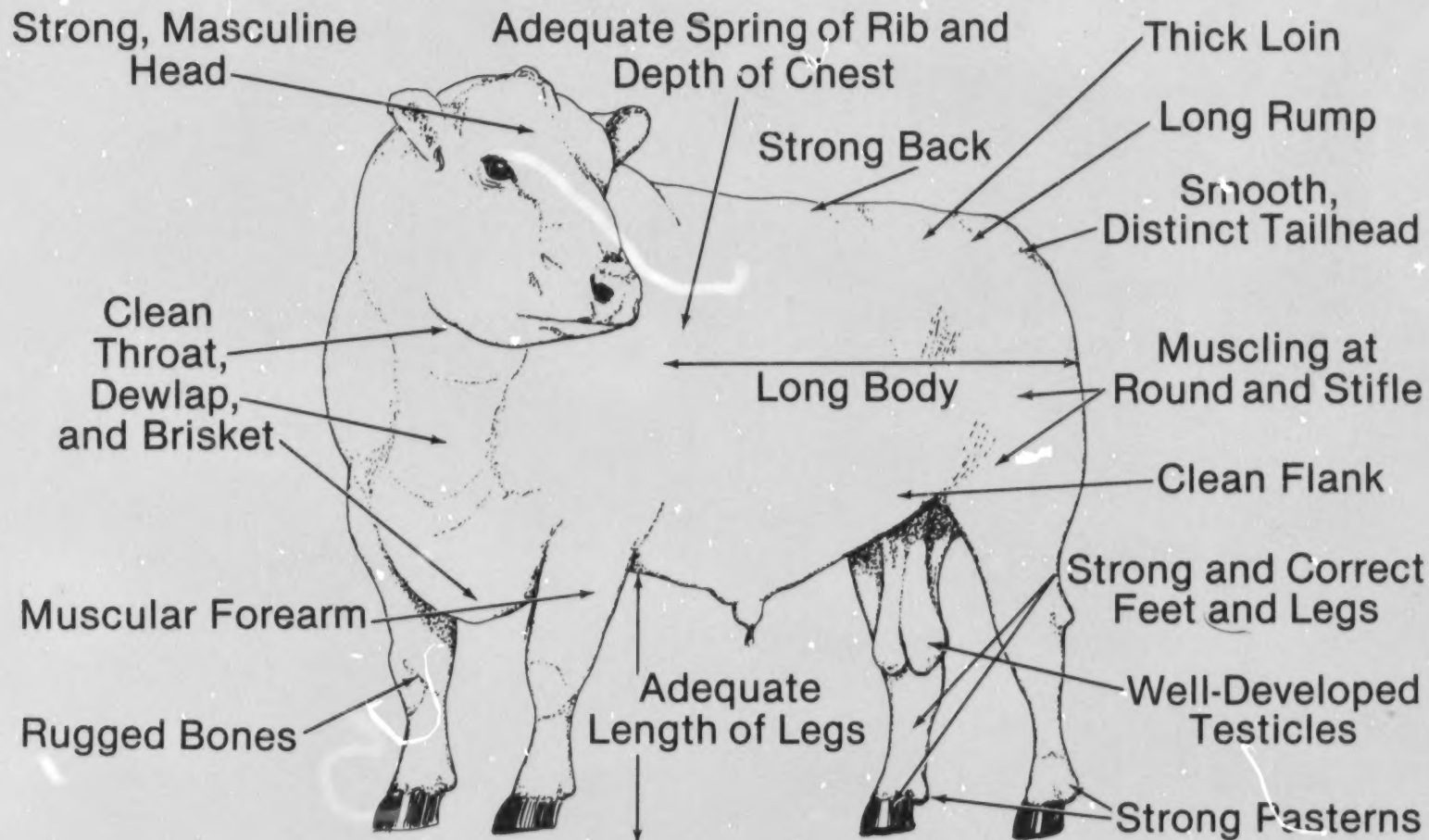
446

447

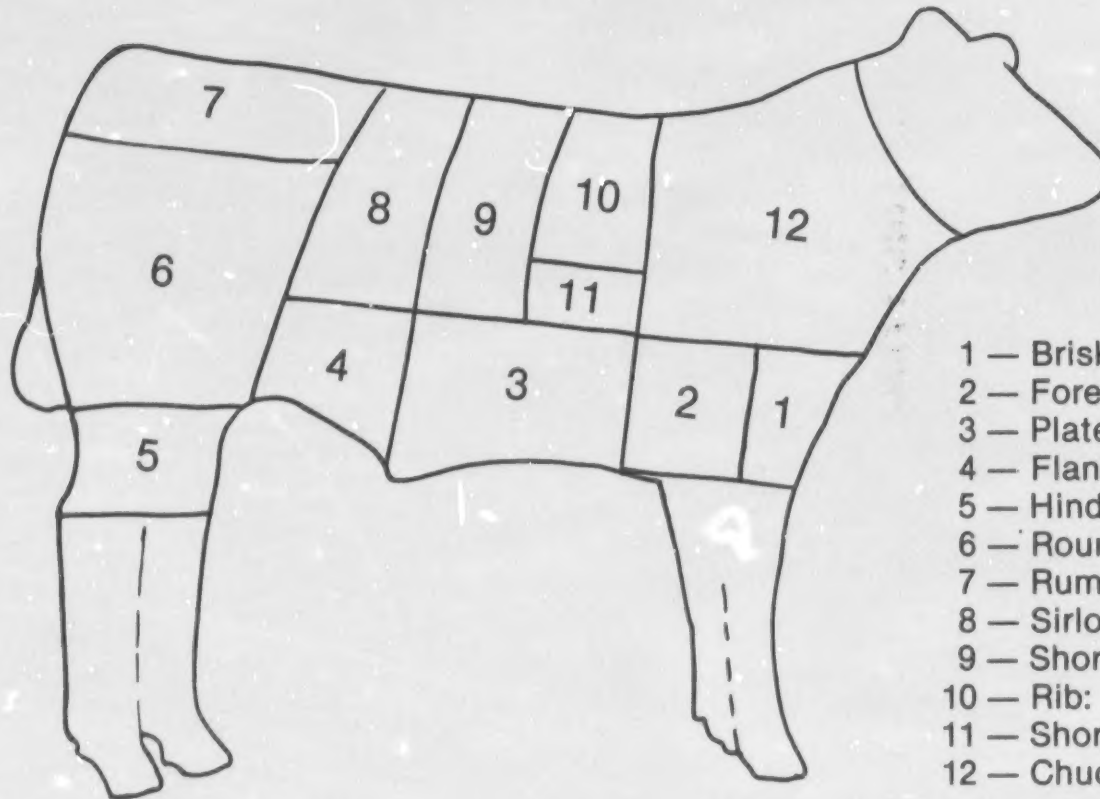
Desirable Characteristics of a Cow



Desirable Characteristics of a Bull



Wholesale Cuts of Beef



- 1 — Brisket: 6%
- 2 — Foreshank: 4%
- 3 — Plate: 5.5%
- 4 — Flank: 4%
- 5 — Hind Shank: 3%
- 6 — Round: 21%
- 7 — Rump: 3%
- 8 — Sirloin: 9%
- 9 — Short Loin: 8%
- 10 — Rib: 8%
- 11 — Short Ribs: 1.5%
- 12 — Chuck: 26%

Used with permission of Jarold Callahan, instructor, Animal Science, Oklahoma State University.

**BEEF BREEDS AND SELECTIONS
UNIT II****INFORMATION SHEET****I. Terms and definitions**

- A. **Breed** — Group of animals having a common origin and characteristics that distinguish them from other groups within the same species
- B. **Bull** — Uncastrated male beef animal
- C. **Calf** — Male or female beef animal under one year of age
- D. **Cow** — Mature female beef animal
- E. **Dam** — Female parent
- F. **Sire** — Male parent
- G. **Heifer** — Bovine female that has not borne a calf
- H. **Polled** — Naturally hornless
- I. **Herd** — Group of cattle
- J. **Purebred** — Animal of a recognized breed that is eligible for registry in the official herobook of that breed
- K. **Steer** — Male beef animal castrated at an early age
- L. **Breeder** — Owner of the dam at time of service

INFORMATION SHEET

II. Breeds of beef cattle (Figures 1-15)

A. Horned Hereford

FIGURE 1



Courtesy: American Hereford Association, Kansas City, Missouri.

B. Angus

FIGURE 2

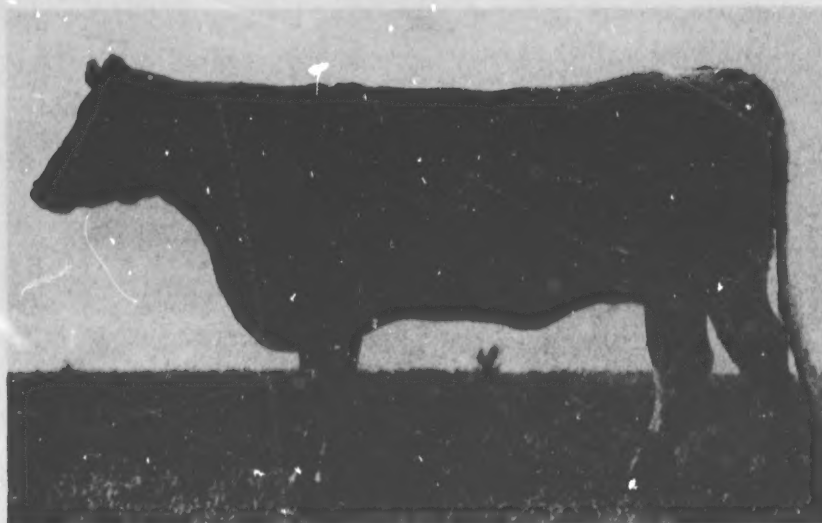


Courtesy: American Angus Association, St. Joseph, Missouri.

INFORMATION SHEET

C. Shorthorn

FIGURE 3



Courtesy: American Shorthorn Association, Omaha, Nebraska.

D. Polled Hereford

FIGURE 4



Courtesy: American Polled Hereford Association, Kansas City, Missouri.

INFORMATION SHEET

E. Red Angus

FIGURE 5



Courtesy: Red Angus Association of America, Denton, Texas.

F. Simmental

FIGURE 6



Courtesy: American Simmental Association, Inc., Bozeman, Montana.

INFORMATION SHEET

G. Gelbvieh

FIGURE 7



Courtesy: American Gelbvieh Association, Denver, Colorado.

H. Charolais

FIGURE 8



Courtesy: International Charolais Association, Kansas City, Missouri.

INFORMATION SHEET

I. Limousin

FIGURE 9



Courtesy: North American Limousin Foundation, Denver, Colorado.

J. Maine-Anjou

FIGURE 10



Courtesy: American Maine-Anjou Association, Kansas City, Missouri.

INFORMATION SHEET

K. Chianina

FIGURE 11



Courtesy: American Chianina Association, Platte City, Missouri.

L. Brahman

FIGURE 12



Courtesy: American Brahman Breeders Association, Houston, Texas.

INFORMATION SHEET

M. Santa Gertrudis

FIGURE 13



Courtesy: American Santa Gertrudis Breeders International, Kingsville, Texas.

N. Brangus

FIGURE 14



Courtesy: International Brangus Breeders Association, Inc., San Antonio, Texas.

INFORMATION SHEET

O. Beefmaster

FIGURE 15

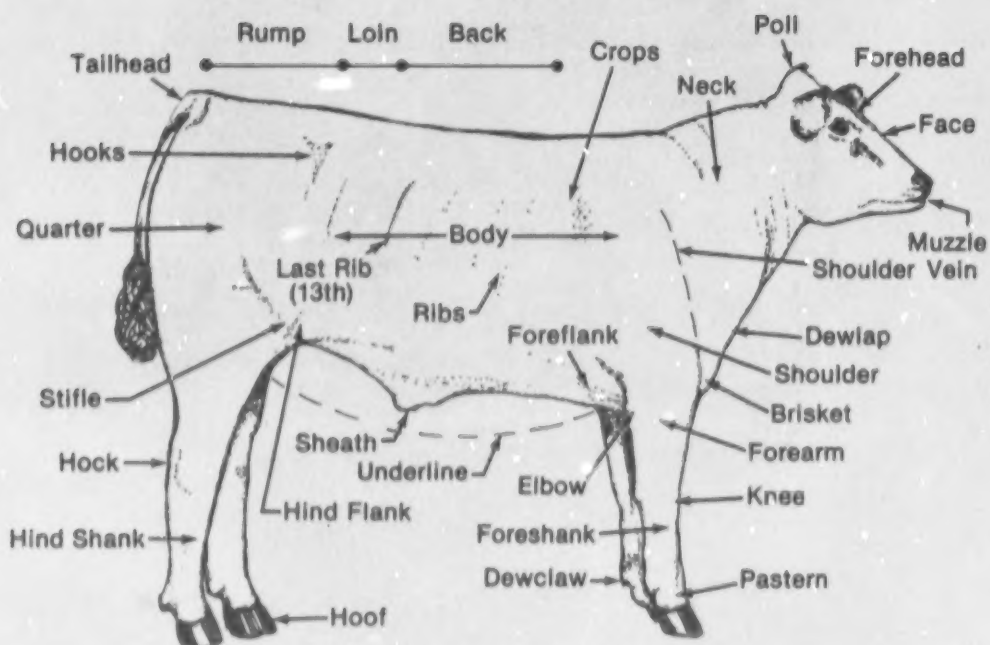


Courtesy: Beefmaster Breeders Universal, San Antonio, Texas.

INFORMATION SHEET

III. Parts of a beef animal (Figure 16)

FIGURE 16



IV. Factors to consider in selecting show animals

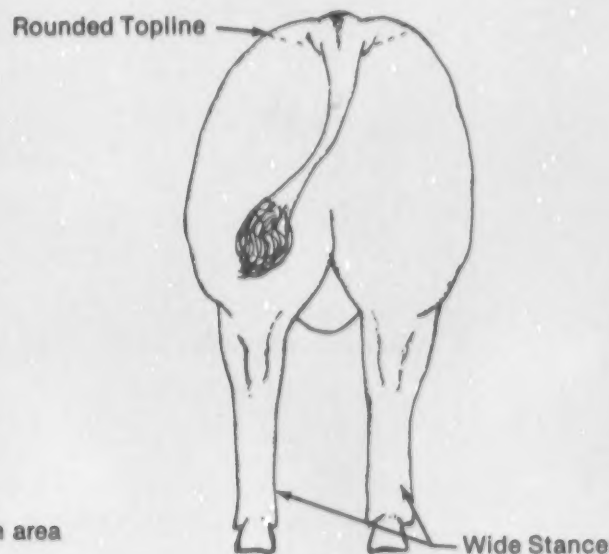
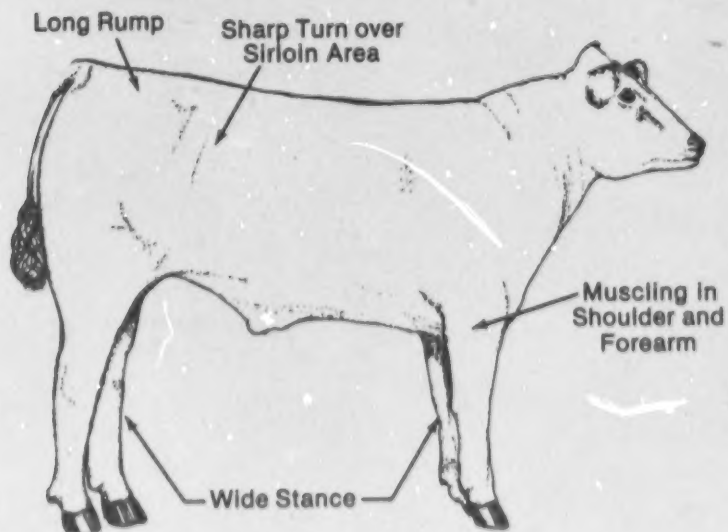
- A. Type
- B. Breeding and performance
- C. Show classification

INFORMATION SHEET

V. Indicators of muscling (Figure 17)

EXAMPLE:

FIGURE 17



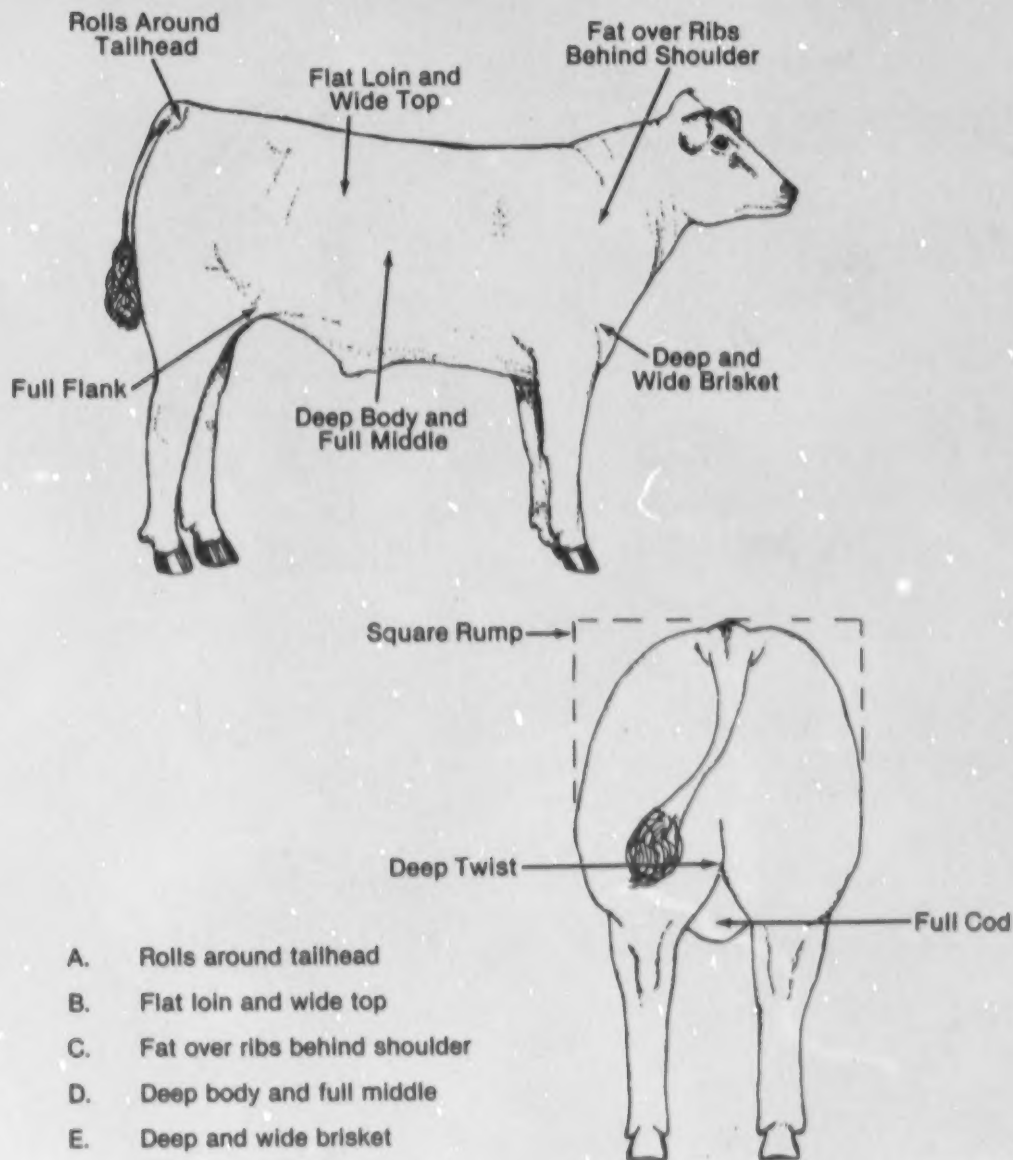
- A. Long rump
- B. Sharp turn over sirloin area
- C. Muscling in shoulder and forearm
- D. Wide stance in front and rear
- E. Rounded topline

INFORMATION SHEET

VI. Indicators of finish (Figure 18)

EXAMPLE:

FIGURE 18



- A. Rolls around tailhead
- B. Flat loin and wide top
- C. Fat over ribs behind shoulder
- D. Deep body and full middle
- E. Deep and wide brisket
- F. Full flank
- G. Square rump
- H. Deep twist
- I. Full cod

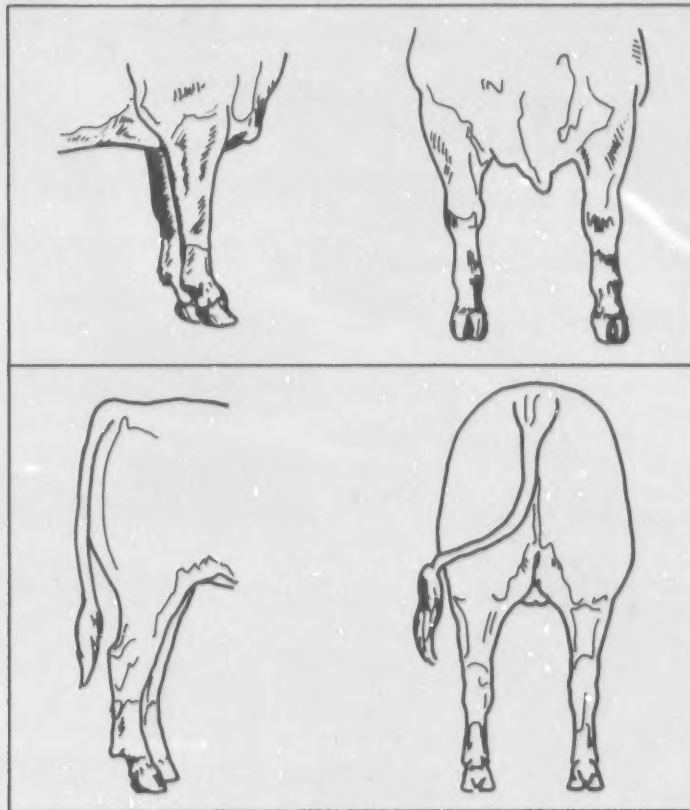
INFORMATION SHEET

VII. Types of defective front and hind legs (Figure 19)

(NOTE: It is very important to examine the legs of an animal closely before selecting the animal. An animal must have structurally correct legs if it is to be profitable, and particularly if it is to be used for breeding. See Figure 19.)

EXAMPLE:

FIGURE 19



Used with permission of Texas Vocational Instructional Services.

INFORMATION SHEET

A. Front legs (Figures 20-23)

1. Splay-footed

FIGURE 20



2. Toed-in

FIGURE 21



Figures 20 and 21 used with permission of Texas Vocational Instructional Services.

3. Calf-kneed

FIGURE 22



4. Buck-kneed

FIGURE 23



Figures 22 and 23 used with permission of Texas Vocational Instructional Services.

INFORMATION SHEET

B. Hind legs (Figures 24-27)

1. Out in the hocks

FIGURE 24



2. Cow-hocked

FIGURE 25



Figures 24 and 25 used with permission of Texas Vocational Instructional Services.

3. Post-legged

FIGURE 26



4. Sickle-hocked

FIGURE 27



Figures 26 and 27 used with permission of Texas Vocational Instructional Services.

INFORMATION SHEET

VIII. Characteristics of the ideal market steer (Figure 28)

(NOTE: A task force composed of the speakers at the National Steer Symposium, along with selected beef-industry leaders, developed the following recommendations for the ideal market steer.)

EXAMPLE:

FIGURE 28



Used with permission of the Idaho State Board for Vocational Education.

- A. Maximum age — Eighteen months
- B. Minimum weight (normal fill) — 1,100 pounds
- C. Maximum weight (normal fill) — 1,300 pounds

INFORMATION SHEET

- D. Desired average daily gain (120 days) — 3 pounds per day
 - E. Minimum average daily gain (120 days) — 2 pounds per day
 - F. Minimum hip height — 52 inches
 - G. Maximum hip height — 57 inches
 - H. Minimum fat cover at twelfth rib — 0.3 inches
 - I. Maximum fat cover at twelfth rib — 0.5 inches
 - J. Desired rib eye area — 2 square inches per 100 pounds carcass weight
 - K. Maximum yield grade — 2.9
 - L. Minimum quality grade — Good +
- IX. Desirable characteristics of a cow (Figure 29)

EXAMPLE:

FIGURE 29



Courtesy: American Hereford Association, Kansas City, Missouri.

INFORMATION SHEET

- A. Feminine head
 - B. Clean, neat throat and brisket
 - C. Wide chest
 - D. Large bones
 - E. Well-sprung ribs
 - F. Strong topline
 - G. Long rump
 - H. Distinct tailhead that is smooth but free of fat
 - I. Adequate muscling in stifle area
 - J. Correct leg placement
 - K. Strong pasterns
 - L. Well-developed udder and teats
- X. Desirable characteristics of a bull (Figure 30)

EXAMPLE:

FIGURE 30



Courtesy: American Angus Association, St. Joseph, Missouri.

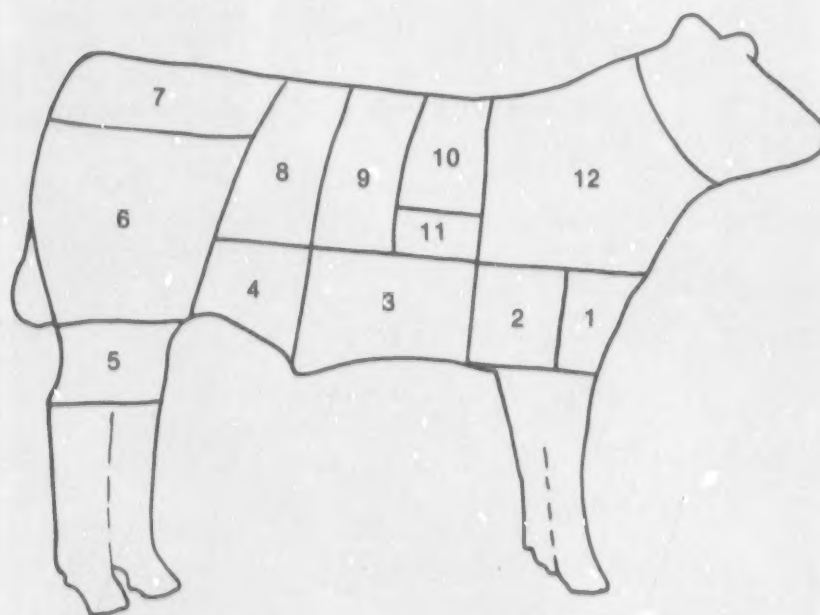
INFORMATION SHEET

- A. Strong, masculine head
- B. Clean throat, dewlap, and brisket
- C. Muscular forearm
- D. Rugged bones
- E. Adequate length of legs
- F. Clean flank
- G. Well-developed testicles
- H. Strong pastern
- I. Strong and correct feet and legs
- J. Adequate muscling at round and stifle
- K. Smooth, distinct tailhead
- L. Long rump
- M. Thick loin
- N. Strong back
- O. Adequate spring of rib and depth of chest
- P. Well-developed chest
- Q. Long body

INFORMATION SHEET

XI. Wholesale cuts of beef and desired percentages of total carcass yield (Figure 31)

FIGURE 31



1 — Brisket: 6%
 2 — Foreshank: 4%
 3 — Plate: 5.5%
 4 — Flank: 4%
 5 — Hind Shank: 3%
 6 — Round: 21%

7 — Rump: 3%
 8 — Sirloin: 9%
 9 — Short Loin: 8%
 10 — Rib: 8%
 11 — Short Ribs: 1.5%
 12 — Chuck: 26%

Used with permission of Jarold Callahan, instructor, Animal Science, Oklahoma State University.

XII. Livestock judging — Process of carefully analyzing an animal's individual traits and comparing those traits to an ideal animal or standard

(NOTE: In a livestock judging contest, there are four animals in a class. The judge analyzes each of the four animals individually, and then compares each animal to other animals in the class.)

INFORMATION SHEET

XIII. Terms associated with livestock judging

- A. Carcass cutability — Estimate of the percentage of trimmed boneless retail cuts from the round, loin, rib, and chuck
- B. Carcass evaluation — Technique of measuring components of quality and quantity of carcasses
- C. Carcass merit — Desirability of a carcass relative to quantity and quality of edible portion
- D. Marbling — Intramuscular fat
- E. Average daily gain — Average weight change of an animal during a twenty-four-hour feeding or grazing period; measured in pounds
- F. Conformation — Animal's overall structure as compared to an ideal
- G. Structure — Fixed pattern
EXAMPLES: Straight, strong top; correct placement of feet and legs
- H. Substance — Muscle and bone
- I. Constitution — Indication of capacity of chest and middle
- J. Size — Correct skeletal frame and weight for age
- K. Quality — Overall smoothness, blending of shoulders, and refinement of head and bone
- L. Trimness — Freedom from excess finish or fat
- M. Soundness — Quality of being correct on the feet and legs
(NOTE: *Soundness* is used primarily with breeding stock.)
- N. Growthiness — Condition of having appropriate size and weight for age
- O. Scale — Size of animal as determined by skeletal structure
- P. Ruggedness — Quality of having large bones and frame
- Q. Broodiness — Combination of characteristics indicating that female probably will be a good mother
- R. Femininity — Traits distinguishing a female from a male
- S. Masculinity — Traits distinguishing a male from a female
- T. Grant — Recognition that an animal has desirable traits but that these traits are not acceptable to be used any higher in class

INFORMATION SHEET

XIV. Beef-judging terms for desirable and undesirable traits (Tables 1 and 2)

TABLE 1

STEERS

AREA	DESIRABLE	UNDESIRABLE
General	Nicer-balanced Heavier-muscled, meatier Trimmer, more correctly finished Thicker, wider, beefier Larger, longer-patterned, larger frame, more scale	Poorly balanced Light-muscled Fat, overfinished Narrow Low-set, short-bodied, less scale
Forequarter	Smoother-shouldered Cleaner-fronted Wider-chested More volume and capacity Heavier, more rugged Heavier-muscled through forearm	Coarse-shouldered Wasty front Narrow chest, front Tight-ribbed, flat-ribbed Refined Light-muscled forearm
Back, loin, and middle	Stronger-topped Thicker, wider-topped Trimmer middle	Weak-topped Narrow-topped Wasty, heavy middle
Hind-quarter	Thicker, wider-rumped Longer, leveler-rumped Longer from hooks to pins Free of fat around tailhead More muscular quarter More shape and dimension to quarter More bulging stifle Wider-standing	Narrow-rumped Droopy-rumped Short-rumped Patchy around tailhead Narrow-quartered Flat-quartered Flat-stifled Narrow-standing
Finish	Firmer-finished Firmer, harder handling More uniformly finished More desirably finished	Soft-finished Soft-handling Patchily finished Overfinished; bare in its finish
Carcass	Thicker, more heavily muscled carcass, would yield a thicker, meatier carcass Would yield a carcass with a higher percent of trimmed retail cuts Would yield a trimmer, more desirable finished carcass with less fat trim Higher-yielding, higher-grading carcass A heavier-muscled, higher-grading carcass due to its advantage in muscle and finish A higher-cutability carcass	A less trim carcass with a higher ratio of fat to lean Should yield a poorly finished carcass that is less apt to grade "choice" An excessively finished steer that should yield the lowest yield A lower-cutability carcass

INFORMATION SHEET

TABLE 2

BREEDING CATTLE

AREA	DESIRABLE	UNDESIRABLE
General	Meatier, heavier-muscled To size and scale Nicely balanced More substance of bone Higher quality More stylish Larger, growthier	Narrow, light-muscled Small-framed Poorly balanced Light-boned Low quality Off type Small, early-maturing
Head, neck and chest	More feminine Typier-fronted More youthful-appearing head More masculine (bulls) Wider and deeper-chested More rugged (bulls) More powerfully fronted	Lacks femininity Coarse-fronted Shows a lot of age about head Plain-headed Weak-headed Narrow-chested Refined
Shoulder and middle	Smooth-shouldered Wide-topped Stronger, straighter back Greater spring of rib Wider over back and loin Deeper-ribbed or-hearted Trimmer middle Heavier-muscled down top	Coarse-shouldered Narrow-topped Weak-topped Tight-chested Narrow-loined Shallow-chested Wasty middle Lighter-muscled down top
Hindquarter	Heavier muscled quarter Bulge to quarter Dimension to quarter Thicker rump Squarer rump Leveler from hooks to pins Longer-rumped Higher at pins Smoother tailhead	Light muscled quarter Flat quarter Narrow quarter Narrow rump Droopy rump Tapers hooks to pins Shorter-rumped Low at pins, slopes from hooks to pins Rough tailhead
Feet and legs	Stands on more bone More rugged substance of bone Stands more correctly on feet and legs More correct set of hocks Stands wider in front and rear Stronger pasterns	Fine-boned Light-boned Pigeon-toed; buck-kneed; splay-footed Post-legged; cow-hocked; sickle-hocked Narrow-standing Weak pasterns
Movement	More correct-moving Straighter-traveling Freer-moving	Walks under behind; rolls in front Moves close in front and behind Sluggish-moving

INFORMATION SHEET

- XV. Purpose of the FFA placing card — Identifying the judge and recording the placing (Figure 32)

(NOTE: Fill out the card in pencil, and write clearly. An incorrectly written card can cause a team to lose a contest.)

EXAMPLE:

FIGURE 32

FFA PLACING CARD		Contestant's Initial <i>BP</i>	No. <i>80-A</i>	Class <i>Hereford heifers</i>	1-2-3-4
					1-2-4-3
Placing Grade _____					1-3-2-4
					1-3-4-2
Reason Grade _____					1-4-2-3
					1-4-3-2
					2-1-3-4
					2-1-4-3
					2-3-1-4
					2-3-4-1
					2-4-1-3
					2-4-3-1 <i>X</i>
					3-1-2-4
					3-1-4-2
					3-2-1-4
					3-2-4-1
					3-4-1-2
					3-4-2-1
					4-1-2-3
					4-1-3-2
					4-2-1-3
					4-2-3-1
					4-3-1-2
					4-3-2-1

- XVI. Computing placing scores

(NOTE: There are always four animals in a livestock class. The maximum score possible on a class is fifty. A score of fifty points represents a perfect placing, an exact match with the official placings on the class. After the class is judged and the official placings have been announced, you should be able to compute your score. Cuts, or variations, are made between the different animals in the class. Use simple addition and subtraction to calculate your score.)

- A. Compare your placings to official placings

EXAMPLE:

Official Placing

Your Placing

3-4-2-1
2 5 4 (cuts)

1-2-3-4

INFORMATION SHEET

B. Write your placings as pairs

EXAMPLE: $\frac{1}{2}$ $\frac{2}{3}$ $\frac{3}{4}$
 $\frac{1}{3}$ $\frac{2}{4}$
 $\frac{1}{4}$

C. Use cuts to calculate points

1. Compare each pair you placed to the corresponding pair in the official placing
2. Count zero points for each matching pair
3. Count points for pairs that do not match by adding cuts that fall between the paired numbers
4. Total the points for all pairs

EXAMPLE: Official placing 3 - 4 - 2 - 1 Your placing 1 - 2 - 3 - 4
 2 5 4

$1/2 = 4$ points $2/3 = 2 + 5 = 7$ points $3/4 = 0$ points

1/3 = 2 + 5 + 4 = 11 points 2/4 = 5 points

1/4 = 5 + 4 = 9 points

Total of points = $4 + 11 + 9 + 7 + 5 = 36$

D. Subtract total points from 50 to find placing score

EXAMPLE: Subtract 36 points from 50 points = 14 points

Your score = 14

(NOTE: If the class had placed 4 - 3 - 2 - 1, there would have been a top switch, which would have cost two points, making your score 48 points. If 2 and 3 had been switched, it would have cost 5 points, making your score 45 points.)

XVII. Purpose of giving reasons for placings — Presenting your opinion and justification for placing a class of livestock

(NOTE: Learning to give livestock reasons is probably one of the most important things you can learn in this class. Giving reasons provides the opportunity to organize thoughts in a confident, precise, and logical manner.)

INFORMATION SHEET

XVIII. Steps to follow in taking notes for oral reasons for placings (Figure 33)

(NOTE: It is important to learn to take good notes in preparation for giving oral reasons for your placings. You may judge several classes in a day and give the reasons for your placings at a later time. By taking good notes, you can develop a good set of reasons. Write your notes in a 6-by-9-inch stenographer's spiral notebook, and use a pencil.)

EXAMPLE:

FIGURE 33

Market Steers 3-4-1-2											
1. small framed, conventional, overly finished 2. extremely bare - may grade standard, light muscled 3. good steer - heavy-muscled, correct finish 4. heavy-muscled, needs more finish, attractive											
3/4 4/3 Crit. 4											
Thicker, heavier muscled cleaner fronted, bare-finished											
Total dimension of quarter smoother shouldered light-muscled lower											
more correctly finished Stronger top quarter											
-better chance to grade higher cutability											
"choice"											
4/1 1/4 Crit. 1											
much heavier muscled more correctly small frame											
steer, especially down finished poorly balanced											
top and through quarter volume overly finished - fat											
Straighter lined, nicer											
balanced, eye appeal,											
yield grade potential											
1/2 2/1 Crit. 2											
beefier, more desir- straighter-lined narrow, light-muscled											
ably finished volume, trimmer middle bare-finished											
capacity											
packer-acceptable carcass											
standard quality grade											

INFORMATION SHEET

- A. Identify the class
- B. Write your placing at the top of the page
- C. Write the numbers 1 through 4 down the side of the page, leaving approximately three lines between the numbers
- D. Take notes on each animal to identify strong points and criticisms of each
- E. Take notes by pairs, giving advantages as well as grants

(NOTE: The following set of written reasons was developed from the notes given in the example.)

MARKET STEER REASONS

I prefer an alignment of 3 - 4 - 1 - 2 on this class of crossbred market steers.

I placed 3 first, as he was the stoutest-made, most powerfully constructed steer and best combined muscle and correctness of finish; however, if I could change 3, I would like to see him smoother-fronted.

Nonetheless, in my initial pair, 3 as compared to 4 was a thicker, heavier-muscled steer that had more shape and natural bulge of muscle down his top with more total dimension of muscle to both rump and quarter. Likewise, 3 was a more correctly finished steer that had a greater degree of fat cover over his top and down over his ribs than 4. Therefore, due to 3's advantage in muscle and finish, he would yield a heavier-muscled carcass that should be more apt to grade "choice."

I will readily concede that 4 was a cleaner-fronted, smoother-shouldered steer that was stronger down his top and would yield a higher cutability carcass than 3. However, I faulted 4 and prefer to place him second as he was a bare, open-ribbed steer that needed more thickness to his lower quarter and stifle.

But, in regard to my intermediate pair, I liked 4's advantage of muscle and balance, as 4 was a thicker, wider-topped steer that had more thickness to his quarter than 1. Moreover, 4 was a straighter-lined, nicely balanced, more attractive-profiling steer than 1. Due to 4's advantage of muscle and trimness, he would yield a carcass with a lower numerical yield grade than 1.

One was a more correctly finished steer that had more depth of body and overall volume than 4. However, I criticize 1 and prefer him third as he was a small-framed, poorly balanced steer that would yield the lowest cutability carcass in the class.

INFORMATION SHEET

Nevertheless, in my bottom pair, I easily placed 1 over 2 as 1 was a more industry-acceptable steer in that 1 was a thicker, beefier-topped steer and possessed a greater degree of finish. In addition, 1 was a deeper-ribbed, higher-volumed steer that also had a greater amount of muscle mass. Not only was 1 carrying a greater degree of finish, but 1 should also yield a higher-quality grading carcass with more packer acceptability.

Realizing 2 was a straight-lined steer with a trim middle, I chose to place him last because he was a narrow-made, light-muscled, bare-finished steer that would yield the lightest muscled carcass with the least chance of grading "choice."

Written by Bob Kropp
 Professor, Animal Science
 Oklahoma State University

XIX. Techniques for presenting oral reasons for placings

- A. Speak with a clear, powerful voice
- B. Open reasons with a precise opening statement
- C. Never carry notes into reason room
- D. Stand erect, with feet aligned with shoulders
- E. Stand 4 to 8 feet from reason-taker
- F. Talk in a firm voice

(NOTE: Avoid shouting.)

- G. Use good voice control, both in speed and volume

(NOTE: Emphasis on certain points is very important in giving reasons.)

- H. Present reason-taker with an accurate picture of animal
- I. Avoid body movement

(NOTE: Some head movement is acceptable.)

- J. Use identification characteristics whenever possible to let the reason-taker know that you did see the class
- K. Look reason-taker squarely in the eye

INFORMATION SHEET

- L. Stay within allotted two minutes

(NOTE: The reasons should last from one minute and twenty seconds to one minute and forty-five seconds.)

- M. Avoid using more than three terms in succession

- N. Never conclude reasons with, "For these reasons, I placed this class..."

XX. Steps in presenting oral reasons for placings

(NOTE: A class of four animals is divided into three pairs: a top or initial pair, a middle or intermediate pair, and a bottom or concluding pair. The following examples are for a set of reasons for a placing of 1 - 2 - 3 - 4.)

- A. Present opening statement

EXAMPLE: Give name of class and how it was placed. Give criticisms and outstanding good points.

(NOTE: In some cases, a general statement about the entire class may be more applicable.)

- B. Discuss top pair

EXAMPLE: Give reasons for placing 1 over 2, using comparative terms. Give grants for 2 over 1, using comparative terms to point out advantages of 2 over 1. Give criticisms of 2, using descriptive terms.

(NOTE: In close placings, several grants would be desirable as long as they are true. Always criticize an animal on its own merits rather than by comparing it to the animal placed above.)

- C. Discuss middle pair

EXAMPLE: Give reasons for placing 2 over 3 and give grants for 3 over 2. Give criticisms of 3.

- D. Discuss bottom pair

EXAMPLE: Give reasons for placing 3 over 4, and give grants for 4 over 3.

**BEEF BREEDS AND SELECTION
UNIT II****ASSIGNMENT SHEET #1 — IDENTIFY MAJOR BREEDS OF BEEF CATTLE**

NAME _____ SCORE _____

Whether purchasing or judging beef cattle, you must be able to call the breeds by their correct names.

Shown below and on the following pages are photographs of different breeds of beef cattle. Identify each breed by writing its correct name in the blank below the photograph.

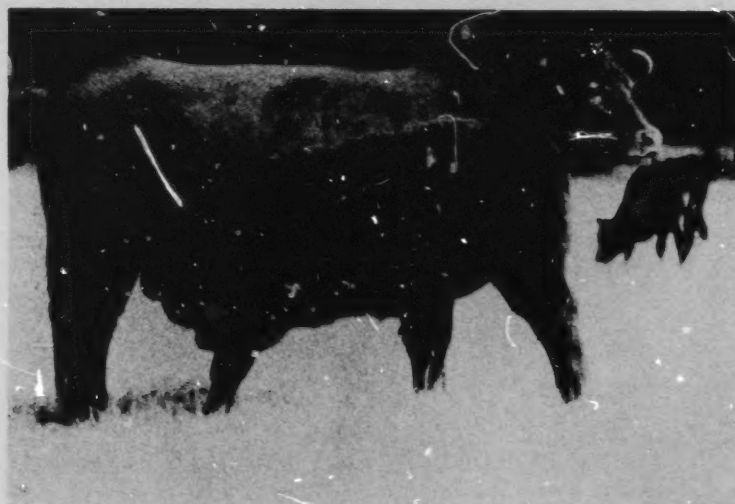


A. _____

ASSIGNMENT SHEET #1

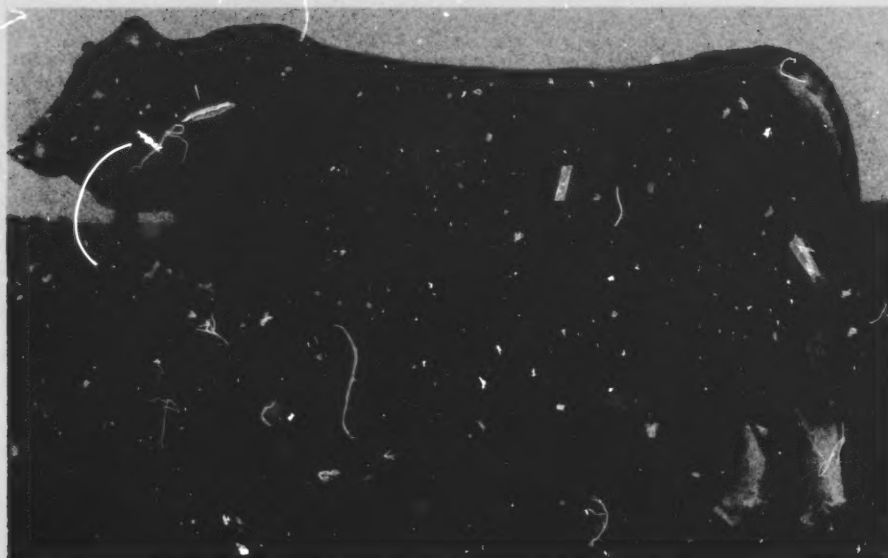


B. _____

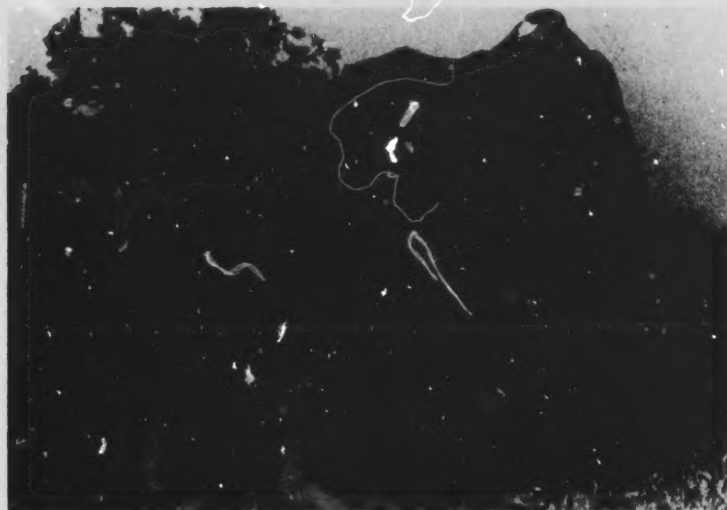


C. _____

ASSIGNMENT SHEET #1

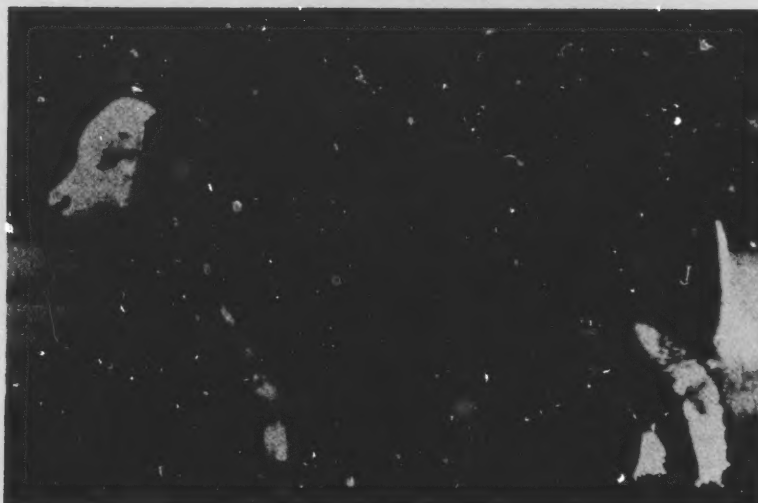


D. _____

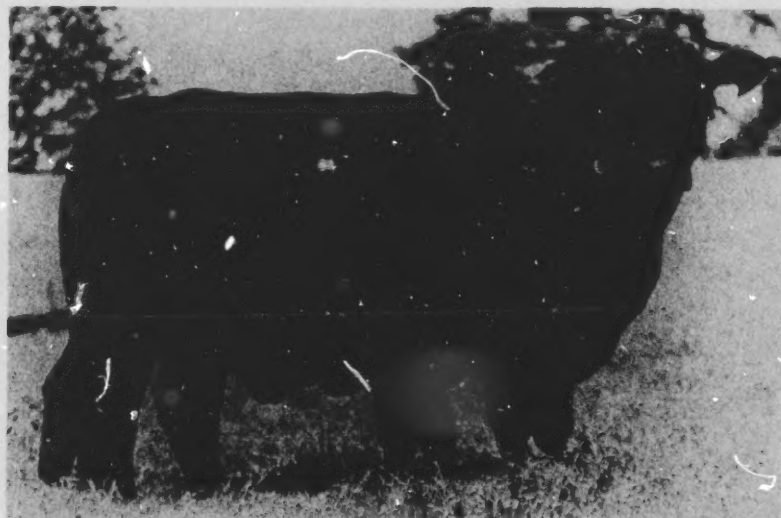


E. _____

ASSIGNMENT SHEET #1

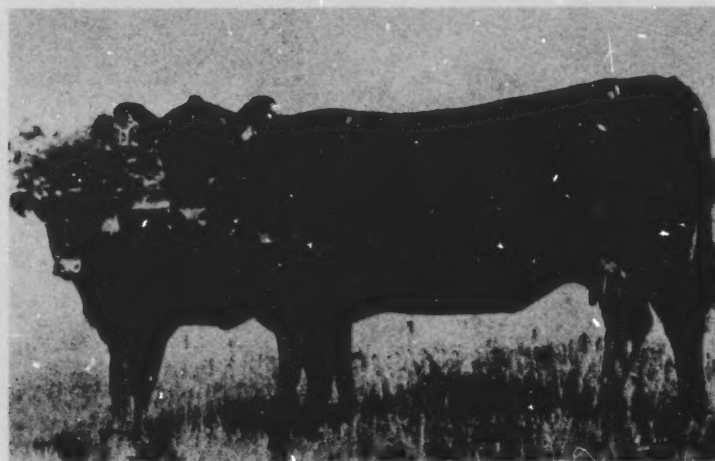


F. _____



G. _____

ASSIGNMENT SHEET #1

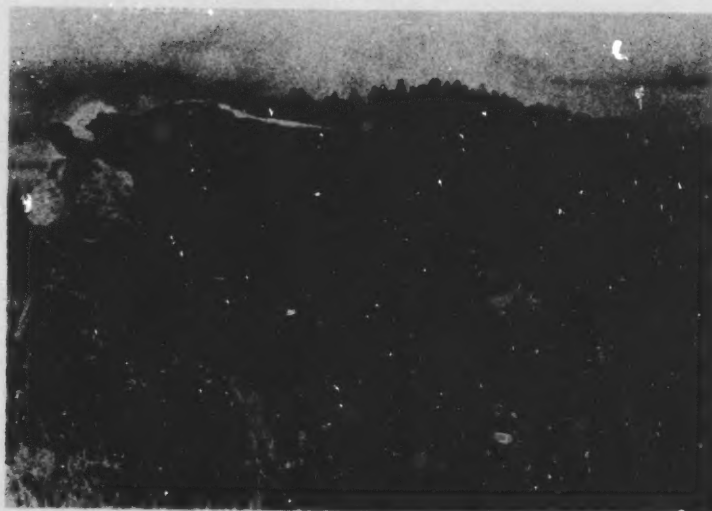


H. _____



I. _____

ASSIGNMENT SHEET #1



J.



K.

ASSIGNMENT SHEET #1



L

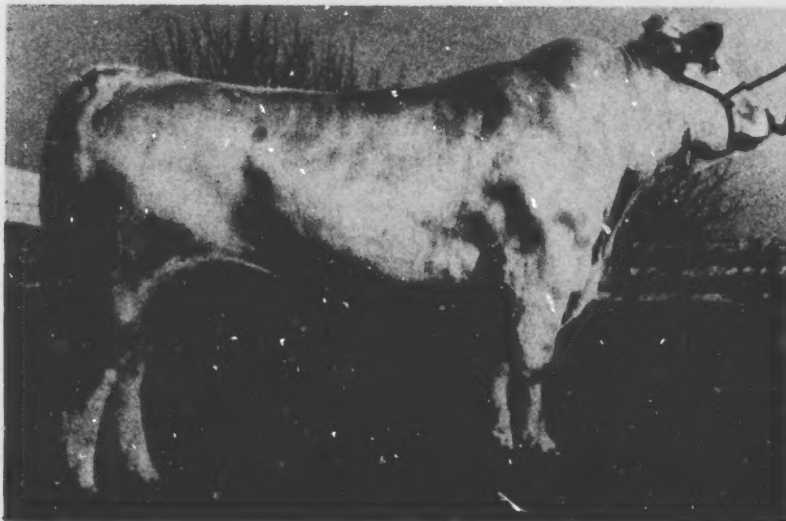


M.

ASSIGNMENT SHEET #1



N.



O.

Photographs in this assignment sheet courtesy: Santa Gertrudis Breeders International, Kingsville, Texas; North American Limousin Foundation, Denver, Colorado; American Chianina Association, Platte City, Missouri; American Gelbvieh Association, Denver, Colorado; Beefmaster Breeders Universal, San Antonio, Texas; American Simmental Association, Inc., Bozeman, Montana; Brangus Breeders Association, Inc., San Antonio, Texas; American Shorthorn Association, Omaha, Nebraska; Red Angus Association of America, Denton, Texas; American Polled Hereford Association, Kansas City, Missouri; American Angus Association, St. Joseph, Missouri; American Maine-Anjou Association, Kansas City, Missouri; American Brahman Breeders Association, Houston, Texas; American Hereford Association, Kansas City, Missouri; and American International Charolais Association, Kansas City, Missouri.

BEEF BREEDS AND SELECTION UNIT II

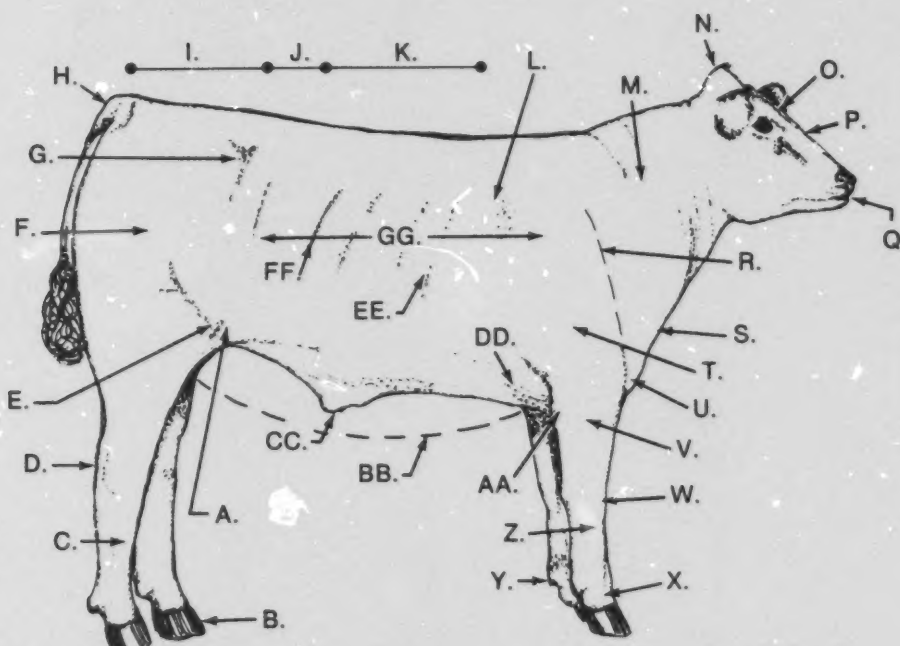
ASSIGNMENT SHEET #2 — LABEL THE PARTS OF A BEEF ANIMAL

NAME _____

SCORE _____

A good livestock judge is able to identify the parts of a beef animal. When judging, you will be required to refer to the parts by their correct names.

Label the parts of the beef animal illustrated below. Write the names of the parts in the corresponding blanks on the following page.



ASSIGNMENT SHEET #2

A.	_____	R.	_____
B.	_____	S.	_____
C.	_____	T.	_____
D.	_____	U.	_____
E.	_____	V.	_____
F.	_____	W.	_____
G.	_____	X.	_____
H.	_____	Y.	_____
I.	_____	Z.	_____
J.	_____	AA.	_____
K.	_____	BB.	_____
L.	_____	CC.	_____
M.	_____	DD.	_____
N.	_____	EE.	_____
O.	_____	FF.	_____
P.	_____	GG.	_____
Q.	_____		

BEEF BREEDS AND SELECTION UNIT II

ASSIGNMENT SHEET #3 — LABEL TYPES OF DEFECTIVE FRONT AND HIND LEGS

NAME _____ SCORE _____

A desirable beef animal should stand on ample legs that are correctly placed under its body. The purpose of this assignment is to identify the type of defect shown in each drawing.

Label each of the following drawings with the type of front or hind leg defect shown.



A. _____



B. _____



C. _____



D. _____

ASSIGNMENT SHEET #3



E. _____



F. _____



G. _____



H. _____



I. _____



J. _____

Illustrations in this assignment sheet used with permission of Texas Vocational Instructional Services.

**BEEF BREEDS AND SELECTION
UNIT II****ASSIGNMENT SHEET #4 — EVALUATE CHARACTERISTICS OF A COW**

NAME _____

SCORE _____

In Section IX of the Information Sheet you studied the desirable characteristics of a beef cow. This assignment sheet provides you with the opportunity to practice what you have studied.

Evaluate the characteristics of each cow shown in the following pictures. List desirable and undesirable traits.

A. 3



Courtesy: American Shorthorn Association, Omaha, Nebraska.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #4

B.



Courtesy: American International Charolais Association, Kansas City, Missouri.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #4

C.



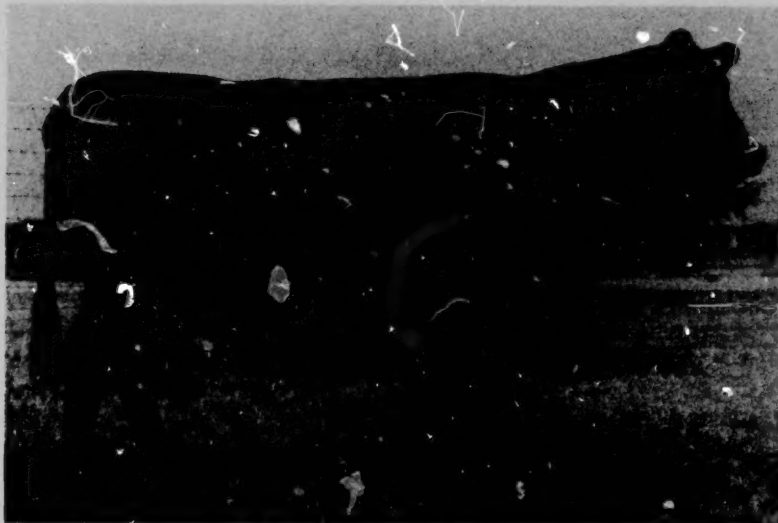
Courtesy: American Hereford Association, Kansas City, Missouri.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #4

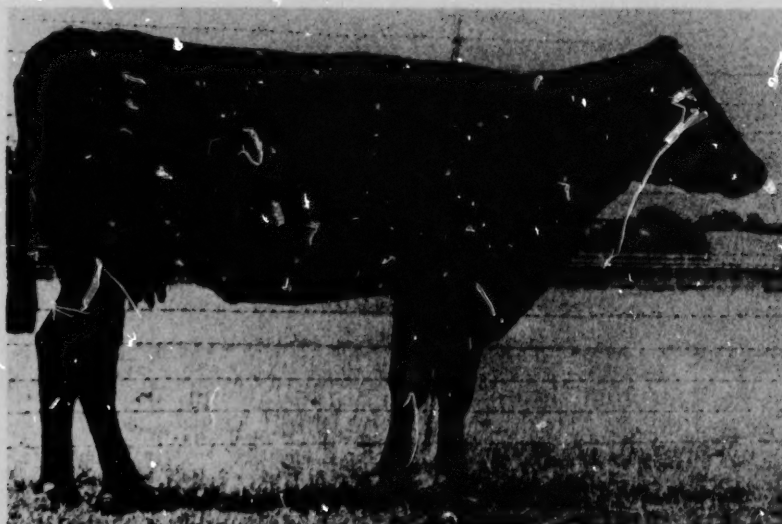
D.



Courtesy: Deep Down Ranch, Paluxy, Texas.

Desirable Traits

Undesirable Traits

E
ASSIGNMENT SHEET #4

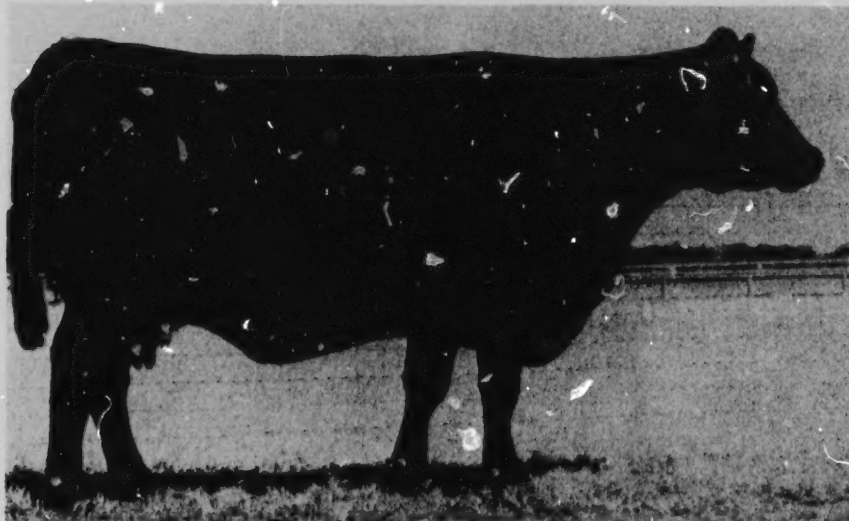
Courtesy: Deep Down Ranch, Paluxy, Texas.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #4

F.



Courtesy: Deep Down Ranch, Paluxy, Texas.

Desirable Traits

Undesirable Traits

BEEF BREEDS AND SELECTION
UNIT II**ASSIGNMENT SHEET #5 — EVALUATE CHARACTERISTICS OF A BULL**

NAME _____

SCORE _____

In Section X of the Information Sheet you studied the desirable characteristics of a beef bull. Because the bull is the key to herd improvement, the farmer or rancher must be able to evaluate the animal for its desirable and undesirable traits.

Evaluate the characteristics of each bull shown in the following pictures. List desirable and undesirable traits.

A.



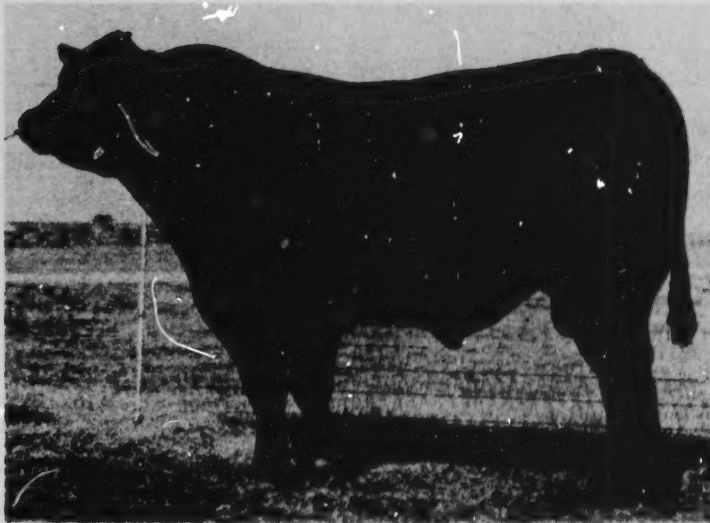
Courtesy: American Polled Hereford Association, Kansas City, Missouri.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #5

B.



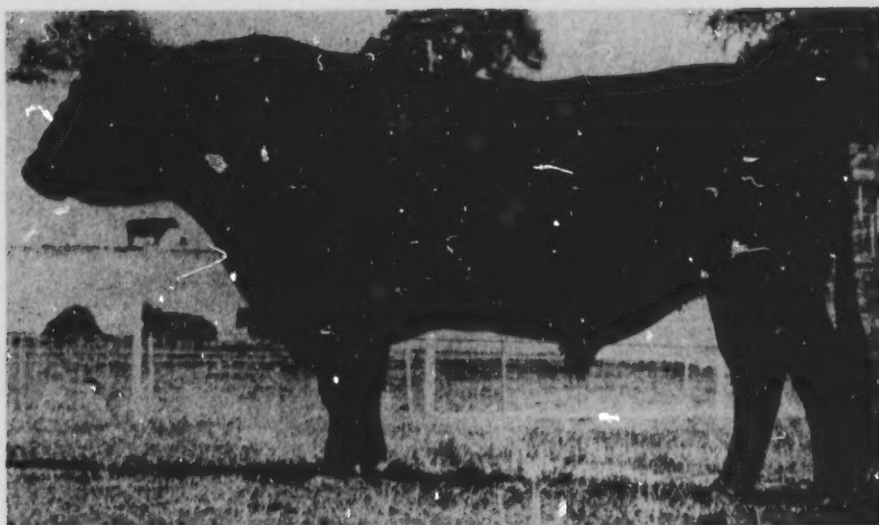
Courtesy: Deep Down Ranch, Paluxy, Texas.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #5

C.



Courtesy: Deep Down Ranch, Paluxy, Texas.

Desirable Traits

Undesirable Traits

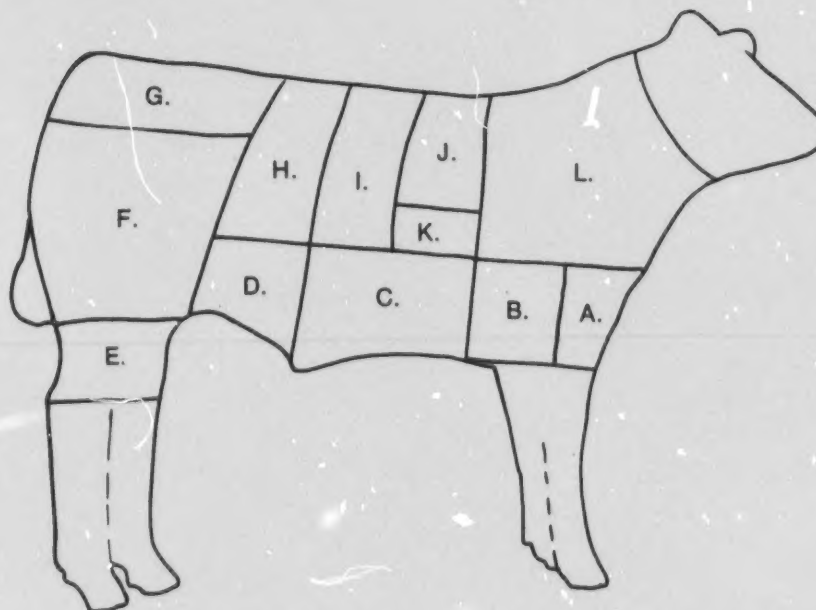
**BEEF BREEDS AND SELECTION
UNIT II****ASSIGNMENT SHEET #6 — LABEL WHOLESALE CUTS OF BEEF WITH THEIR
PROPER NAMES AND DESIRED PERCENTAGES OF TOTAL CARCASS YIELD**

NAME _____

SCORE _____

In a previous assignment you learned the parts of a beef animal. Now you must learn to identify the wholesale cuts of meat and the area of the carcass where each cut is located. A beef animal having desirable conformation will yield a large percentage of rib, loin, and round.

The animal illustrated below shows desirable muscling and finish. Label wholesale cuts and desirable percentages of total carcass yield by writing each in the corresponding blanks on the next page.



Used with permission of Jarold Callahan, instructor, Animal Science, Oklahoma State University.

ASSIGNMENT SHEET #6

A.	_____	_____ %
B.	_____	_____ %
C.	_____	_____ %
D.	_____	_____ %
E.	_____	_____ %
F.	_____	_____ %
G.	_____	_____ %
H.	_____	_____ %
I.	_____	_____ %
J.	_____	_____ %
K.	_____	_____ %
L.	_____	_____ %

**BEEF BREEDS AND SELECTION
UNIT II**

**ASSIGNMENT SHEET #7 — USE CORRECT BEEF-JUDGING TERMS
FOR DESIRABLE AND UNDESIRABLE TRAITS**

NAME _____

SCORE _____

One of the most important things that you can learn as a vocational agriculture student is how to give a set of oral reasons for your placings. Giving reasons provides you with an opportunity to organize your thoughts, to present your ideas and your opinions, and to justify why you placed a class of animals. Many people judge livestock, but very few have the capability of giving a good set of oral reasons for their placings. One of the main reasons that individuals have trouble giving reasons is that they do not know how to use standard terminology to justify their placings.

Listed below are beef-judging terms. Write the term for the undesirable trait when given the desirable trait, and write the term for the desirable trait when given the undesirable trait.

- | | |
|-----------------------------|-------|
| A. Larger, longer-patterned | _____ |
| B. Nicer-balanced | _____ |
| C. Light-muscled | _____ |
| D. Cleaner-fronted | _____ |
| E. More rugged | _____ |
| F. Meatier-topped | _____ |
| G. Heavy middle | _____ |
| H. Refined | _____ |
| I. Trimmer middle | _____ |
| J. Weak-topped | _____ |
| K. More uniformly finished | _____ |
| L. Thicker, wider rump | _____ |
| M. Flat-quartered | _____ |
| N. Patchily finished | _____ |
| O. More stylish | _____ |
| P. More feminine | _____ |

ASSIGNMENT SHEET #7

- | | | |
|----|-----------------------|-------|
| Q. | Wide-topped | _____ |
| R. | Wasty middle | _____ |
| S. | Thicker-rumped | _____ |
| T. | Longer-rumped | _____ |
| U. | Greater spring of rib | _____ |
| V. | Conventional | _____ |
| W. | Weak-topped | _____ |
| X. | Plain-headed | _____ |
| Y. | Higher quality | _____ |

BEEF BREEDS AND SELECTION UNIT II

ASSIGNMENT SHEET #8 — USE FFA PLACING CARDS

NAME _____

SCORE _____

As a student of vocational agriculture, and as an FFA member, you will have opportunities to participate in livestock judging contests. The contest may be held on a local, state, or national level. Judging contests provide you with an opportunity to apply the skills you have learned.

All livestock judging contests use the placing card. You must learn to use the card correctly. The card identifies you as a contestant, and it relates to the officials just how you placed the class.

Before turning in your placing card, make sure that the card is filled out correctly and completely. There should be only one mark on the card indicating your placings of the class. Always use a pencil to fill out the card. Write an "X" in the box beside the numbers that agree with your placings.

EXAMPLE:

FFA PLACING CARD		
Contestant's Initial	BP	1-2-3-4
No.	15-D	1-2-4-3
Class	Market steers	1-3-2-4
		1-3-4-2
		1-4-2-3
		1-4-3-2
		2-1-3-4
		2-1-4-3
		2-3-1-4
		2-3-4-1
		2-4-1-3
		2-4-3-1
		3-1-2-4
		3-1-4-2
		3-2-1-4
		3-2-4-1
		3-4-1-2
		3-4-2-1
		4-1-2-3
		4-1-3-2
		4-2-1-3
		4-2-3-1
		4-3-1-2
		4-3-2-1

Placing Grade _____

Reason Grade _____

ASSIGNMENT SHEET #8

Using the information given, fill out the following FFA placing cards.

- A. Use your correct initials. You are contestant number 4-C, and you are judging a class of Angus heifers. You placed the class 2 - 1 - 4 - 3.

FFA PLACING CARD Contestant's Initial _____ No. _____ Class _____		1-2-3-4	
		1-2-4-3	
		1-3-2-4	
		1-3-4-2	
		1-4-2-3	
		1-4-3-2	
		2-1-3-4	
		2-1-4-3	
		2-3-1-4	
		2-3-4-1	
		2-4-1-3	
		2-4-3-1	
		3-1-2-4	
		3-1-4-2	
		3-2-1-4	
		3-2-4-1	
		3-4-1-2	
		3-4-2-1	
		4-1-2-3	
		4-1-3-2	
		4-2-1-3	
		4-2-3-1	
		4-3-1-2	
		4-3-2-1	
Placing Grade _____ Reason Grade _____			

ASSIGNMENT SHEET #8

- B. Use your correct initials. You are contestant number 10-D, and you are judging a class of market steers. You placed the class 2 - 4 - 1 - 3.

FFA PLACING CARD Contestant's Initial _____ No. _____ Class _____ Placing Grade _____ Reason Grade _____	1-2-3-4	
	1-2-4-3	
	1-3-2-4	
	1-3-4-2	
	1-4-2-3	
	1-4-3-2	
	2-1-3-4	
	2-1-4-3	
	2-3-1-4	
	2-3-4-1	
	2-4-1-3	
	2-4-3-1	
	3-1-2-4	
	3-1-4-2	
	3-2-1-4	
	3-2-4-1	
	3-4-1-2	
	3-4-2-1	
	4-1-2-3	
	4-1-3-2	
	4-2-1-3	
	4-2-3-1	
	4-3-1-2	
	4-3-2-1	

ASSIGNMENT SHEET #8

- C. Use your correct initials. You are contestant number 11-C, and you are judging a class of Polled Hereford heifers. You placed the class 4 - 1 - 3 - 2.

FFA PLACING CARD	Contestant's Initial _____ No. _____ Class _____	1-2-3-4	
		1-2-4-3	
		1-3-2-4	
		1-3-4-2	
		1-4-2-3	
		1-4-3-2	
		2-1-3-4	
		2-1-4-3	
		2-3-1-4	
		2-3-4-1	
		2-4-1-3	
		2-4-3-1	
		3-1-2-4	
		3-1-4-2	
		3-2-1-4	
		3-2-4-1	
		3-4-1-2	
		3-4-2-1	
		4-1-2-3	
		4-1-3-2	
		4-2-1-3	
		4-2-3-1	
		4-3-1-2	
		4-3-2-1	
Placing Grade _____			
Reason Grade _____			

ASSIGNMENT SHEET #8

- D. Use your correct initials. You are contestant number 10-B, and you are judging a class of market steers. You placed the class 3 - 1 - 2 - 4.

FFA PLACING CARD		Contestant's Initial _____	No. _____	Class _____	1-2-3-4	
					1-2-4-3	
Placing Grade _____	Reason Grade _____				1-3-2-4	
					1-3-4-2	
					1-4-2-3	
					1-4-3-2	
					2-1-3-4	
					2-1-4-3	
					2-3-1-4	
					2-3-4-1	
					2-4-1-3	
					2-4-3-1	
					3-1-2-4	
					3-1-4-2	
					3-2-1-4	
					3-2-4-1	
					3-4-1-2	
					3-4-2-1	
					4-1-2-3	
					4-1-3-2	
					4-2-1-3	
					4-2-3-1	
					4-3-1-2	
					4-3-2-1	

BEEF BREEDS AND SELECTION
UNIT II

ASSIGNMENT SHEET #9 — COMPUTE PLACING SCORES

NAME _____

SCORE _____

There is a total of fifty possible points in a livestock class. A score of fifty points represents a perfect score. There are twenty-four possible placings on any given class. Prior to your judging the class, a group of selected officials will have already evaluated the class, determined the official placings, and identified the different cuts that each class should receive. The cuts are used to compute your score. The purpose of this assignment is to give you practice in computing your scores.

Use Information Sheet, Section XVI to assist you in working the problems below.

- A. Class 1, Simmental heifers. Official placings are 2 - 1 - 3 - 4 with cuts of 5, 4, 3. You placed the class 2 - 4 - 3 - 1; what is your placing score?

Your score = _____

- B. Class 2, Angus steers. Official placings are 4 - 1 - 3 - 2 with cuts of 5, 5, 5. You placed the class 1 - 4 - 3 - 2; what is your placing score?

Your score = _____

ASSIGNMENT SHEET #9

- C. Class 3, Hereford heifers. Official placings are 3 - 2 - 1 - 4 with cuts of 4, 4, 4. You placed the class 2 - 1 - 3 - 4; what is your placing score?

Your score = _____

- D. Class 4, Market steers. Official placings are 4 - 1 - 3 - 2 with cuts of 5, 4, 4. You placed the class 3 - 1 - 4 - 2; what is your placing score?

Your score = _____

- E. Class 5, Brangus heifers. Official placings are 3 - 2 - 4 - 1 with cuts of 4, 4, 4. You placed the class 4 - 1 - 2 - 3; what is your placing score?

Your score = _____

BEEF BREEDS AND SELECTION
UNIT IIASSIGNMENT SHEET #10 — EVALUATE SETS OF WRITTEN REASONS
FOR PLACING CLASSES OF BEEF CATTLE

NAME _____

SCORE _____

Reasons for placing a class of beef cattle must be clear and must contain standard terminology.

Listed below are two sets of written reasons for placing classes of beef cattle. The first activity will help you see how terms for desirable and undesirable traits are used and how these terms are tied together. The second part of this assignment allows you to evaluate the placing reasons for clarity, correct style, and correctness.

PART I

Circle the terms for desirable traits, and underline the terms for undesirable traits in the set of written reasons below.

CROSSBRED STEER REASONS

I placed these crossbred steers 4 - 3 - 2 - 1. I considered 4 a placeable top as he best combined size, muscling, and correctness of finish; however, I would like to see him stronger over his top.

In my top pair, I preferred 4 over 3, as 4 was a taller, longer-patterned steer that was especially longer in his rump. Furthermore, 4 was a thicker, wider-topped steer that had more shape and expression of muscling down through his quarter than 3. Four was a trimmer, firmer-handling steer that would hang up a heavier-muscled, higher-cutability carcass. I will grant 3 was a straighter lined steer that was flat in his quarter.

In my middle pair, I placed 3 over 2, as 3 was a nicer-balanced, stretchier steer. Three was a cleaner-fronted steer that was trimmer in his middle and firmer-handling down his top than 2. In addition, 3 was standing on more substance of bone and was deeper ribbed than 2. Three will hang up a trimmer carcass with a higher ratio of lean to fat. I will concede that 2 was a wider-standing, heavier-muscled steer, but I criticize him as he was a heavy-fronted, patchy-finished steer that was too small.

In moving to my bottom pair, I liked 2 over 1, as 2 was the thickest-topped, heaviest-quartered steer in the class. Two was a deeper-ribbed steer that did stand on more length of leg than 1. I realize that 1 was a much trimmer steer, being especially trimmer over his top and through his middle; however, I placed 1 last as he was a small-framed, light-muscled steer that was bare over his ribs. In addition 1 was an extremely light-quartered steer that would hang up the carcass least apt to grade "choice."

ASSIGNMENT SHEET #10

PART II

Read the set of written reasons below, and then evaluate them by answering the questions that follow.

ANGUS HEIFER REASONS

I placed these Angus heifers 1 - 2 - 3 - 4. One was the largest, growthiest heifer in the class, although, I would like to see her stand straighter behind.

In my top pair, however, I did place 1 over 2 as 1 was a taller, longer-bodied heifer that had more femininity about her head. In addition, 1 was a nicer-balanced heifer that had more evidence of muscle down her top and more volume through her quarter than 2. One also stood wider in front and was deeper in her foreleg than 2. However, I will grant that 2 was a trimmer-conditioned heifer that stood on straighter feet and legs. However, I faulted her and placed her second as she was a plain-headed, low-set heifer.

In reference to the middle pair, I preferred 2 over 3 primarily because 2 was a straighter-lined, stronger-topped heifer that moved out straighter in front and behind than 3. Furthermore, 2 had more shape and expression of muscle over her top and had a thicker, deeper quarter than 3. I will readily concede that 3 was a more feminine-headed heifer that had more elevation; however, I criticize her and place her third as she was a high-conditioned, light-muscled, narrow-made heifer from end to end.

In moving to my bottom pair, I placed 3 over 4, as 3 was a larger, growthier heifer that exhibited more overall growth potential than 4. In addition, she was a straighter-lined, leveler-rumped heifer that stood on more substance of bone than 4. I do grant that 4 was an extremely clean-fronted, trim-conditioned heifer, but I placed 4 last as she was the smallest-framed, lightest-muscled, poorest-balanced heifer in the class.

- A. Are the reasons written in a clear, concise manner? ☐ Yes ☐ No
- B. Did the reasons convince you that the class was placed correctly? ☐ Yes ☐ No

Justify your answer. _____

- C. Did the writer use correct terms for desirable and undesirable traits? ☐ Yes ☐ No
- D. Did you find any terms for desirable or undesirable traits that lacked meaning or purpose? ☐ Yes ☐ No

If so, name those terms.

ASSIGNMENT SHEET #10

- E. Would you make changes in any of the placing reasons? ☐ Yes ☐ No

Write your changes. _____

- F. Could the placing reasons be given in less than two minutes? ☐ Yes ☐ No

- G. Would the reason-taker be able to identify the animals from the judge's reasons? ☐ Yes ☐ No

Why or why not? _____

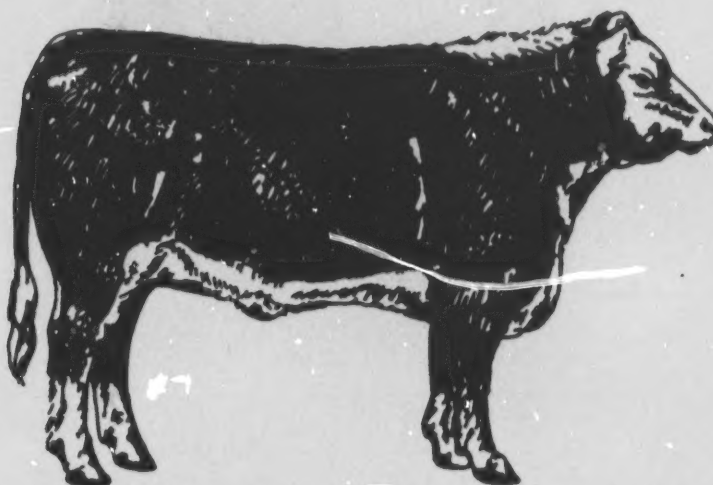
**BEEF BREEDS AND SELECTION
UNIT II****ASSIGNMENT SHEET #11 — EVALUATE MARKET STEERS**

NAME _____ SCORE _____

In Section VIII of the Information Sheet you studied the characteristics of the ideal market steer. This assignment sheet allows you to practice what you have studied.

Shown below and on the following pages are drawings of three steers. Evaluate the characteristics of each market animal. List desirable and undesirable traits in the blanks.

A.

**Desirable Traits**

Undesirable Traits

ASSIGNMENT SHEET #11

B.

**Desirable Traits**

Undesirable Traits

ASSIGNMENT SHEET #11

C.



Desirable Traits

Undesirable Traits

BEEF BREEDS AND SELECTION
UNIT II

ASSIGNMENT SHEET #12 — JUDGE BREEDING CLASSES OF BEEF CATTLE

NAME _____ SCORE _____

This assignment sheet gives you practice judging two breeding classes of beef cattle. Part I contains pictures of a class; Part II will be set up by your instructor.

Below is a class of open heifers for you to judge. Look at each animal and make your placings. Use the space that follows to take notes for writing reasons for your placings. In Assignment Sheet #14 you will write a set of reasons using this information, and you will prepare to give oral reasons.

Class Name Angus Heifers Placings _____

PART I

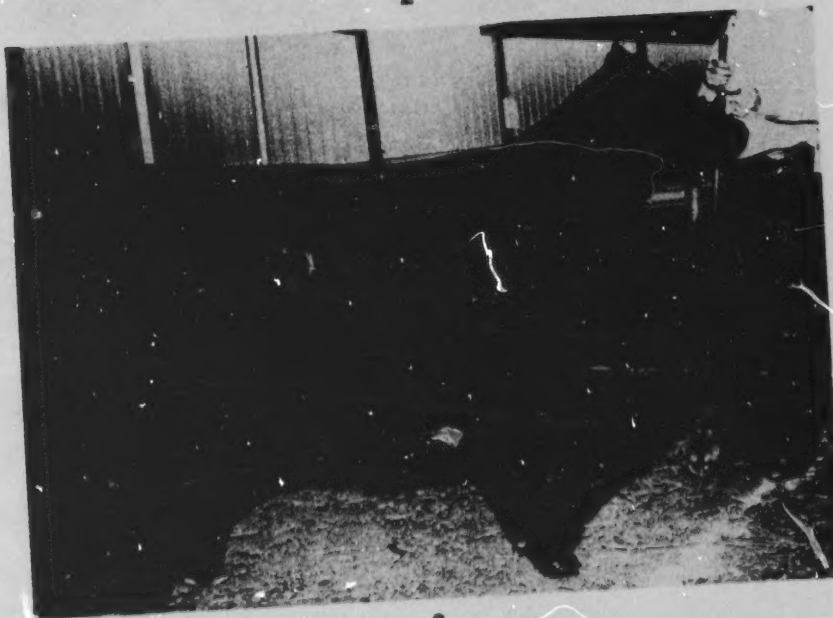


1

ASSIGNMENT SHEET #12



2



3

ASSIGNMENT SHEET #12



ASSIGNMENT SHEET #12

Use this space for taking notes on the class.

Class Name _____ Placings _____

1. _____

2. _____

3. _____

4. _____

PART II

Judge the class that has been set up for you. The instructor or an upperclass member has already placed the officials on the class. Write your placings and take notes on the class. In Assignment Sheet #14 you will write a set of reasons using this information. Be prepared to give the reasons orally.

Class Name _____ Placings _____

1. _____

2. _____

ASSIGNMENT SHEET #12

3. _____

4. _____

**BEEF BREEDS AND SELECTION
UNIT II****ASSIGNMENT SHEET #13 — JUDGE A MARKET CLASS OF STEERS**

NAME _____ SCORE _____

Judge the market class of steers that has been set up for you. The instructor or a junior or senior vocational agriculture student has already placed the officials on the class. Write your placings and take notes on the class. You will use these notes in Assignment Sheet #14.

Class Name _____ Placings _____

Take notes on the class.

1. _____

2. _____

3. _____

4. _____

ASSIGNMENT SHEET #14

B. Class Name _____ Placings _____

[illegible]

ASSIGNMENT SHEET #14

C. Class Name _____ Placings _____

This image shows a blank, aged, cream-colored page, likely an endpaper or flyleaf from an old book. The paper has a slightly textured appearance with some minor discoloration and faint smudges, characteristic of old paper. The left edge of the page shows the binding of the book, and the overall tone is a warm, off-white or light cream.

BEEF BREEDS AND SELECTION
UNIT II**ASSIGNMENT SHEET #15 — GIVE A SET OF ORAL REASONS
FOR PLACING A CLASS OF BEEF CATTLE**

NAME _____ SCORE _____

Giving reasons orally takes a lot of practice. Your reasons should describe to the reason-taker just how you placed the class. In order to obtain a good score, you must convince the reason-taker that your placings are correct.

Select one set of the reasons you wrote in Assignment Sheet #14, and be prepared to give the reasons orally to your instructor or to a junior or senior vocational agriculture student. Read over your reasons several times. Do not attempt to memorize the reasons; just remember the good points of each animal and the grants. You should also have a good opening statement. Stand in front of a mirror and practice your reasons several times.

To help you prepare oral reasons for your beef cattle placings, answer the following questions.

- A. For which class are you giving the reasons? _____
- B. How did you place the class? _____
- C. What is your opening statement? _____

- D. Have you studied the reasons, and can you present them without using any of your notes? _____
- E. What is your closing statement? _____

Review Information Sheet, Sections XIX and XX and then give your reasons orally to the instructor or to a junior or senior vocational agriculture student.

**BEEF BREEDS AND SELECTION
UNIT II****ASSIGNMENT SHEET #16 — USE RESOURCE MATERIALS TO LOCATE INFORMATION
ABOUT BEEF CATTLE BREEDS**

NAME _____ SCORE _____

There are many reasons that individuals select one breed of animals over another. However, the bottom line for most breed selection is personal preference. The breed associations and the members within those associations have worked hard to improve their breeds of cattle. Many associations conduct research on feed conversion and carcass evaluation.

The purpose of this assignment sheet is to give you the opportunity to conduct research on a selected breed. The following information should be of assistance to you in conducting your research.

- Information received from breed associations
- Breed magazines and journals
- Textbooks:

Modern Breeds of Livestock by Hilton M. Briggs and Dinus M. Briggs, Macmillan Publishing Co., Inc., New York, 1980.

Beef Cattle Science by M.E. Ensminger, Interstate Printers and Publishers, Inc., Danville, Illinois, 1976.

Answer the following questions about the breed you have selected for your research.

Breed _____

A. Where did the breed originate? _____

B. What color is the breed? _____

C. What are some distinguishing characteristics of the breed? _____

D. What are considered to be some strong points of the breed? _____

ASSIGNMENT SHEET #16

- E. What year was the breed introduced in the United States? _____
- F. What are the names of some of the people who contributed to the improvement of the breed or who were responsible for bringing the breed to the United States?
- _____
- _____
- _____
- _____
- G. What were the names of the foundation sire and dam?
- Sire _____ Dam _____
- H. What is the name and address of the breed association? _____
- _____
- _____
- I. What is the name of the executive secretary of the breed association? _____
- _____
- J. Does the breed association have a field secretary? _ If yes, what is his or her name?
- _____
- K. Does the breed association publish a magazine or journal? _____
- What is the name of the magazine or journal? _____
- _____
- L. Name some individuals in your community who breed this type of cattle.
- _____
- M. Does Oklahoma have a breed association? _____
- If yes, what is the name of the association, and where is the office located?
- Name _____
- Office location _____

ASSIGNMENT SHEET #16

- N. Are the cows of this breed considered to be good mothers and milkers? _____
- O. Does the breed hang up a desirable carcass? _____
- P. Is the breed used extensively in a crossbreeding program? _____
- Q. Are the bulls considered to be active breeders? _____
- R. What is your opinion of the breed? _____

- S. If you were to go into the beef business, would you purchase this breed? _____
Justify your answer. _____

BEEF BREEDS AND SELECTION
UNIT II

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

- | | |
|--------------------|--------------------|
| A. Chianina | I. Shorthorn |
| B. Santa Gertrudis | J. Polled Hereford |
| C. Limousin | K. Angus |
| D. Gelbvieh | L. Maine-Anjou |
| E. Beefmaster | M. Brahman |
| F. Simmental | N. Horned Hereford |
| G. Brangus | O. Charolais |
| H. Red Angus | |

Assignment Sheet #2

- | | |
|---------------|------------------|
| A. Hind flank | N. Poll |
| B. Hoof | O. Forehead |
| C. Hind shank | P. Face |
| D. Hock | Q. Muzzle |
| E. Stifle | R. Shoulder vein |
| F. Quarter | S. Dewlap |
| G. Hocks | T. Shoulder |
| H. Tailhead | U. Brisket |
| I. Rump | V. Forearm |
| J. Loin | W. Knee |
| K. Back | X. Pastern |
| L. Crops | Y. Dewclaw |
| M. Neck | Z. Foreshank |

ANSWERS TO ASSIGNMENT SHEETS

- AA. Elbow
- BB. Underline
- CC. Sheath
- DD. Foreflank
- EE. Ribs
- FF. Last rib (13th)
- GG. Body

Assignment Sheet #3

- A. Out in the hocks
- B. Sickle-hocked
- C. Splay-footed
- D. Post-legged
- E. Cow-hocked
- F. Post-legged
- G. Toed-in
- H. Buck-kneed
- I. Calf-kneed
- J. Sickle-hocked

Assignment Sheet #4

A. Desirable Traits

Long-fronted
 Straight-lined
 Nice-balanced
 Feminine
 Long cannon
 Large-framed
 Correct feet and legs
 Long-bodied

Undesirable Traits

Shallow-ribbed
 Narrow-rumped
 Fine-boned
 Heavy briskets

ANSWERS TO ASSIGNMENT SHEETS

B. Desirable Traits

Nicely balanced
Heavy-muscled
Big-volumed
Large-framed
Growthy
Heavy-boned

Undesirable Traits

Round-rumped
Leathery-fronted
Coarse-shouldered
In at hocks
Straight, steep-shouldered

C. Desirable Traits

Correct on feet and legs
Long-bodied
Nicely balanced
Big-volumed
Good spring of rib
Straight-lined
Level-rumped
Feminine-fronted
Flat-shouldered
Good udder

Undesirable Traits

Leathery-fronted
Heavy brisket
Short-necked

D. Desirable Traits

Large-framed
Long-bodied
Smooth-shouldered
Good volume and capacity
Adequate muscle

Undesirable Traits

Too much set to hock
Heavy brisket
Droops hooks to pins
Needs leveler udder
Fine-boned

E. Desirable Traits

Trim-conditioned
Good elevation and extension

Undesirable Traits

Poorly balanced
Fine-boned
Crooked-legged
Narrow-made
Light-muscled
Tight-ribbed

ANSWERS TO ASSIGNMENT SHEETS

F. Desirable Traits

Large-framed
Large capacity
Straight-lined
Correct feet and legs
Thick-quartered

Undesirable Traits

Poor udder attachment
Large balloon teats
Rough-shouldered
Heavy-fronted
Fat, heavy condition
Short

Assignment Sheet #5

A. Desirable Traits

Nicely balanced
Straight-lined
Correct feet and legs
Heavy-muscled
Good testicular development

Undesirable Traits

Rough-shouldered
Short-necked
Shallow-ribbed

B. Desirable Traits

Large-framed
Long-bodied
Heavy-muscled
Well-balanced

Undesirable Traits

Light-boned

C. Desirable Traits

Large-framed

Undesirable Traits

Poorly balanced
Coarse-shouldered
Light-quartered

Assignment Sheet #6

A. Brisket 6%
B. Foreshank 4%
C. Plate 5.5%
D. Flank 4%
E. Hind shank 3%
F. Round 21%

G. Rump 3%
H. Sirloin 9%
I. Short loin 8%
J. Rib 8%
K. Short ribs 1.5%
L. Chuck 26%

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #7

- A. Low-set, short-bodied
- B. Poorly balanced
- C. Heavier-muscled; meatier
- D. Wasty front
- E. Refined
- F. Light muscled down top
- G. Cleaner middle
- H. More rugged
- I. Wasty middle
- J. Stronger-topped
- K. Patchily finished
- L. Narrow rump
- M. Shape and dimensions of quarter
- N. More uniformly finished
- O. Off type
- P. Lacks femininity
- Q. Narrow-topped
- R. Trimmer middle
- S. Narrow-rumped
- T. Shorter-rumped
- U. Tight-chested
- V. More stylish
- W. Stronger, straighter back
- X. More youthful appearing head
- Y. Low quality

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #8

A.

FFA PLACING CARD		Contestant's Initial	No.	4-C	
		Class	Angus Heifers		
Placing Grade	Reason Grade	1-2-3-4			
		1-2-4-3			
		1-3-2-4			
		1-3-4-2			
		1-4-2-3			
		1-4-3-2			
		2-1-3-4			
		2-1-4-3		X	
		2-3-1-4			
		2-3-4-1			
		2-4-1-3			
		2-4-3-1			
		3-1-2-4			
		3-1-4-2			
		3-2-1-4			
		3-2-4-1			
		3-4-1-2			
		3-4-2-1			
		4-1-2-3			
		4-1-3-2			
		4-2-1-3			
		4-2-3-1			
		4-3-1-2			
		4-3-2-1			

B.

FFA PLACING CARD		Contestant's Initial	No.	10-D	
		Class	Market steers		
Placing Grade	Reason Grade	1-2-3-4			
		1-2-4-3			
		1-3-2-4			
		1-3-4-2			
		1-4-2-3			
		1-4-3-2			
		2-1-3-4			
		2-1-4-3			
		2-3-1-4			
		2-3-4-1			
		2-4-1-3		X	
		2-4-3-1			
		3-1-2-4			
		3-1-4-2			
		3-2-1-4			
		3-2-4-1			
		3-4-1-2			
		3-4-2-1			
		4-1-2-3			
		4-1-3-2			
		4-2-1-3			
		4-2-3-1			
		4-3-1-2			
		4-3-2-1			

ANSWERS TO ASSIGNMENT SHEETS

C.

FFA PLACING CARD		Contestant's Initial	No.	11-C
		Class	Polled Hereford Heifers	
Placing Grade	Reason Grade	1-2-3-4		
		1-2-4-3		
		1-3-2-4		
		1-3-4-2		
		1-4-2-3		
		1-4-3-2		
		2-1-3-4		
		2-1-4-3		
		2-3-1-4		
		2-3-4-1		
		2-4-1-3		
		2-4-3-1		
		3-1-2-4		
		3-1-4-2		
		3-2-1-4		
		3-2-4-1		
		3-4-1-2		
		3-4-2-1		
		4-1-2-3		
		4-1-3-2		
		4-2-1-3		
		4-2-3-1		
		4-3-1-2		
		4-3-2-1		

D.

FFA PLACING CARD		Contestant's Initial	No.	10-B
		Class	Market Steers	
Placing Grade	Reason Grade	1-2-3-4		
		1-2-4-3		
		1-3-2-4		
		1-3-4-2		
		1-4-2-3		
		1-4-3-2		
		2-1-3-4		
		2-1-4-3		
		2-3-1-4		
		2-3-4-1		
		2-4-1-3		
		2-4-3-1		
		3-1-2-4		
		3-1-4-2		
		3-2-1-4		
		3-2-4-1		
		3-4-1-2		
		3-4-2-1		
		4-1-2-3		
		4-1-3-2		
		4-2-1-3		
		4-2-3-1		
		4-3-1-2		
		4-3-2-1		

Assignment Sheet #9

- A. 36
 B. 45
 C. 38
 D. 32
 E. 14

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #10

PART I

CROSSBRED STEER REASONS

I placed these crossbred steers 4 - 3 - 2 - 1. I considered 4 a placeable top as he best combined size, muscling, and correctness of finish however, I would like to see him stronger over his top.

In my top pair I preferred 4 over 3, as 4 was a taller, longer patterned steer that was especially longer in his rump. Furthermore, 4 was a thicker, wider topped steer that had more shape and expression of muscling down through his quarter than 3. Four was a trimmer, firmer handling steer that would hang up a heavier-muscled, higher-cutability carcass. I will grant 3 was a straighter lined steer that was flat in his quarter.

In my middle pair I placed 3 over 2, as 3 was a nicer balanced, stretchier steer. Three was a cleaner-fronted steer that was trimmer in his middle and firmer handling down his top than 2. In addition, 3 was standing on more substance of bone and was deeper ribbed than 2. Three will hang up a trimmer carcass with a higher ratio of lean to fat. I will concede that 2 was a wider-standing, heavier-muscled steer, but I criticize him as he was a heavy-fronted, patchy-finished steer that was too small.

In moving to my bottom pair, I liked 2 over 1, as 2 was the thickest-topped, heaviest-quartered steer in the class. 2 was a deeper-ribbed steer that did stand on more length of leg than 1. I realize that 1 was a much trimmer steer being especially trimmer over his top and through his middle however, I placed 1 last as he was a small-framed, light-muscled steer that was bare over his ribs. In addition 1 was an extremely light-quartered steer that would hang up the carcass least apt to grade "choice."

PART II — Evaluated to the satisfaction of the instructor

(NOTE: The following criteria are suggestions for evaluating student responses.)

- A. Were the student's responses correct?
- B. Did the student find any desirable or undesirable terms that lacked meaning or purpose?
- C. Did the student suggest that changes should be made in the reasons?
- D. Could the reasons be given in less than two minutes?

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #11

Desirable Traits	Undesirable Traits
A.	Short-bodied Fat, wasty Lacks size and scale Excess finish
B.	Light-framed Shallow-bodied Light-muscled
C.	
Trim brisket	
Bulging forearm	
Well-developed rump	

Assignment Sheet #12

PART I — Evaluated to the satisfaction of the instructor

(NOTE: The official placings are 2 - 3 - 1 - 4. The cuts are 2, 3, 5.)

PART II — Evaluated to the satisfaction of the instructor

Assignment Sheet #13 — Evaluated to the satisfaction of the instructor

(NOTE: The following criteria are suggestions for evaluating student responses.)

- A. Did the student place the class correctly?
- B. What was the student score on the placings?

Assignment Sheet #14 — Evaluated to the satisfaction of the instructor

(NOTE: The following criteria are suggestions for evaluating student responses.)

- A. Did the student use correct terms for desirable and undesirable traits in writing the reasons?
- B. Did the student tie the phrases together?

ANSWERS TO ASSIGNMENT SHEETS

- C. Did the reasons separate the pairs?
- D. Were the reasons convincing?
- E. Could the reasons be given in less than two minutes?

Assignment Sheet #15 — Evaluated to the satisfaction of the instructor

(NOTE: The following criteria are suggestions for evaluating student responses.)

- A. Did the student speak with an appropriate voice?
- B. Were the reasons convincing?
- C. Were the reasons presented in less than two minutes?
- D. Did the student look you in the eye?

Assignment Sheet #16 — Evaluated to the satisfaction of the instructor

(NOTE: The following criteria are suggestions for evaluating student responses.)

- A. Were the questions answered correctly?
- B. Did the student use a variety of sources to answer the questions?

BEEF BREEDS AND SELECTION UNIT II

TEST

NAME _____

SCORE _____

1. Match to their correct definitions terms associated with beef breeds and selection. Write the correct numbers in the blanks.

_____a.	Owner of the dam at time of service	1. Bull
_____b.	Mature female beef animal	2. Calf
_____c.	Uncastrated male beef animal	3. Cow
_____d.	Group of animals having a common origin and characteristics that distinguish them from other groups within the same species	4. Breed
_____e.	Female parent	5. Dam
_____f.	Animal of a recognized breed that is eligible for registry in the official herdbook of that breed	6. Sire
_____g.	Male beef animal castrated at an early age	7. Heifer
_____h.	Naturally hornless	8. Polled
_____i.	Bovine female that has not borne a calf	9. Herd
_____j.	Male parent	10. Purebred
_____k.	Group of cattle	11. Steer
_____l.	Male or female beef animal under one year of age	12. Breeder

TEST

2. Identify the breeds of beef cattle shown below. Write the correct name in the blank below each picture.



a. _____



b. _____

TEST



c. _____



d. _____

TEST



e. _____



f. _____

TEST



g.



h.

TEST



i.



j.

TEST



k.



l.

TEST



m. _____



n. _____

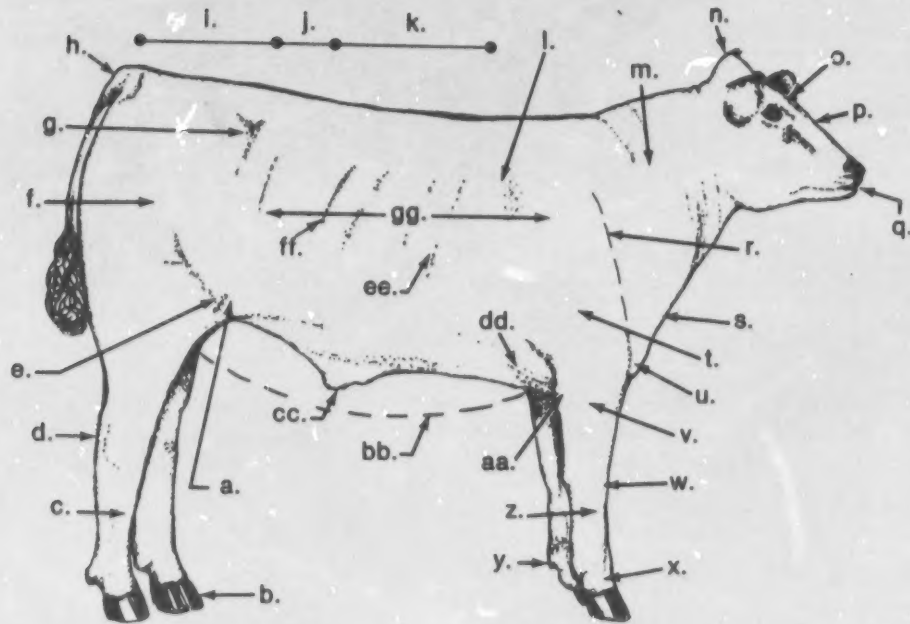
TEST



o.

TEST

3. Label the parts of the beef animal illustrated below. Write the correct names in the corresponding blanks on the next page.



TEST

a.	_____	r.	_____
b.	_____	s.	_____
c.	_____	t.	_____
d.	_____	u.	_____
e.	_____	v.	_____
f.	_____	w.	_____
g.	_____	x.	_____
h.	_____	y.	_____
i.	_____	z.	_____
j.	_____	aa.	_____
k.	_____	bb.	_____
l.	_____	cc.	_____
m.	_____	dd.	_____
n.	_____	ee.	_____
o.	_____	ff.	_____
p.	_____	gg.	_____
q.	_____		

4. List factors to consider in selecting show animals.

a.	_____
b.	_____
c.	_____

TEST

5. List indicators of muscling.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

6. List five indicators of finish.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

7. Label the following types of defective front and hind legs.

Front Legs



a. _____



b. _____

TEST



c. _____



d. _____

Hind Legs



e. _____



f. _____

TEST



g. _____



h. _____

8. Select from the following list the characteristics of the ideal market steer. Write an "X" in the blanks before ideal characteristics.

- ____a. Maximum fat cover at twelfth rib — 0.5 inch
- ____b. Structure — Sound
- ____c. Feed conversion — 1.0
- ____d. Minimum weight (normal fill) — 1,100 pounds
- ____e. Maximum yield grade — 2.9
- ____f. Minimum quality grade — Good +
- ____g. Desired rib eye area — 2 square inches per 100 pounds carcass weight
- ____h. Minimum hip height — 42 inches
- ____i. Desired average daily gain (120 days) — 2 pounds per day
- ____j. Maximum age — Twenty-four months
- ____k. Minimum fat cover at twelfth rib — 0.3 inches
- ____l. Maximum hip height — 57 inches
- ____m. Maximum weight (normal fill) — 1,300 pounds

TEST

9. List ten desirable characteristics of a cow.

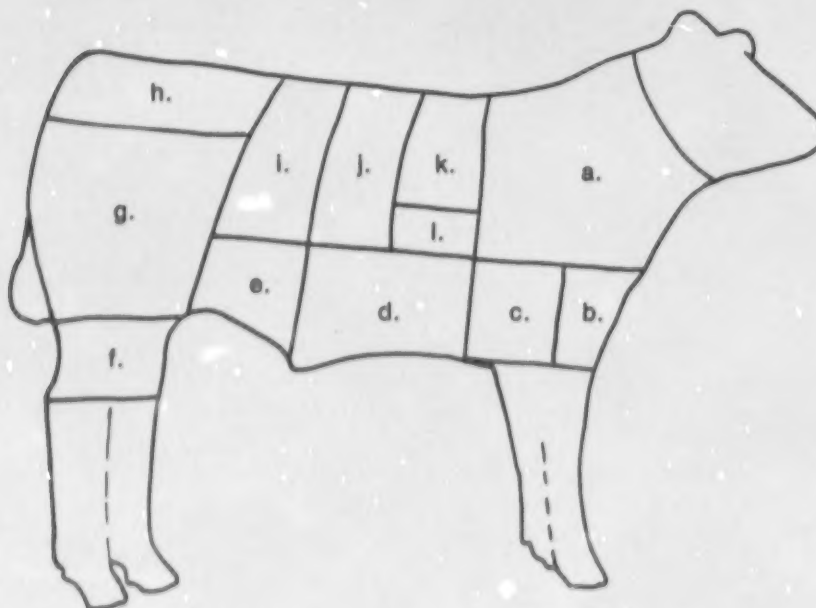
- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____
- g. _____
- h. _____
- i. _____
- j. _____

10. List ten desirable characteristics of a bull.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____
- g. _____
- h. _____
- i. _____
- j. _____

TEST

11. Label wholesale cuts of beef with their proper names and desired percentages of total carcass yield. Write the correct names and percentages of carcass yield in the corresponding blanks.



a.	_____	_____ %	g.	_____	_____ %
b.	_____	_____ %	h.	_____	_____ %
c.	_____	_____ %	i.	_____	_____ %
d.	_____	_____ %	j.	_____	_____ %
e.	_____	_____ %	k.	_____	_____ %
f.	_____	_____ %	l.	_____	_____ %

12. Define *livestock judging*.

TEST

13. Match to their correct definitions terms associated with livestock judging. Write the correct numbers in the blanks.

_____a.	Animal's overall structure as compared to an ideal	1. Conformation
_____b.	Estimate of the percentage of trimmed boneless retail cuts from the round, loin, rib, and chuck	2. Average daily gain
_____c.	Intramuscular fat	3. Marbling
_____d.	Average weight change of an animal during a twenty-four-hour feeding or grazing period; measured in pounds	4. Carcass merit
_____e.	Technique of measuring components of quality and quantity of carcasses	5. Carcass evaluation
_____f.	Desirability of a carcass relative to quantity and quality of edible portion	6. Carcass cutability
_____g.	Fixed pattern	7. Structure
_____h.	Recognition that an animal has desirable traits but that these traits are not acceptable to be used any higher in class	8. Grant
_____i.	Traits distinguishing a male from a female	9. Masculinity
_____j.	Muscle and bone	10. Substance
_____k.	Traits distinguishing a female from a male	11. Femininity
_____l.	Indication of capacity of chest and middle	12. Broodiness
_____m.	Combination of characteristics indicating that female probably will be a good mother	13. Quality
_____n.	Correct skeletal frame and weight for age	14. Ruggedness
_____o.	Quality of having large bones and frame	15. Size
_____p.	Overall smoothness, blending of shoulders, and refinement of head and bone	16. Scale
_____q.	Size of animal as determined by skeletal structure	17. Soundness
_____r.	Freedom from excess finish or fat	18. Growthiness
_____s.	Condition of having appropriate size and weight for age	19. Trimness
_____t.	Quality of being correct on the feet and legs	20. Constitution

TEST

14. Distinguish between selected beef-judging terms for desirable and undesirable traits. Write an "X" in the blank before each term for a desirable trait.

- ____ a. Narrow
- ____ b. Larger, longer-patterned
- ____ c. Wasty front
- ____ d. More rugged
- ____ e. Cleaner-fronted
- ____ f. Weak-topped
- ____ g. Trimmer middle
- ____ h. Wasty middle
- ____ i. Free of fat around tailhead
- ____ j. Shorter-rumped
- ____ k. Soft-handling
- ____ l. More uniformly finished
- ____ m. Higher-yielding, higher-grading carcass
- ____ n. Higher quality
- ____ o. More feminine (cows)
- ____ p. Weak-headed
- ____ q. Weak-topped
- ____ r. Squarer rump
- ____ s. Stands wider in front and rear
- ____ t. Fine-boned
- ____ u. Freer-moving

TEST

15. State the purpose of the FFA placing card.

16. Compute placing scores by working the following problems. Show your work.

- a. You judged a class of market steers and the official placings were 3 - 2 - 1 - 4 with cuts of 5, 5, 5. You placed the class 2 - 1 - 3 - 4.

What is your score? _____

- b. You judged a class of Angus helpers and the official placings were 2 - 4 - 3 - 1 with cuts of 2, 5, 4. You placed the class 2 - 3 - 4 - 1.

What is your score? _____

17. State the purpose of giving reasons for placings.

TEST

18. Arrange in order the steps to follow in taking notes for oral reasons for placings. Write a "1" before the first step, a "2" before the second step, and so on.
- ____a. Write your placing at the top of the page
 - ____b. Take notes on each animal to identify strong points and criticisms of each
 - ____c. Identify the class
 - ____d. Write the numbers 1 through 4 down the side of the page, leaving approximately three lines between the numbers
 - ____e. Take notes by pairs, giving advantages as well as grants
19. Select from the following list techniques for presenting oral reasons for placings. Write an "X" in the blank before each correct answer.
- ____a. Speak with a clear, powerful voice
 - ____b. Use five terms in succession
 - ____c. Carry notes into the reason room
 - ____d. Open reasons with a precise opening statement
 - ____e. Talk for more than two minutes
 - ____f. Stand 4 to 8 feet from reason-taker
 - ____g. Avoid body movement
 - ____h. Look reason-taker squarely in the eye
 - ____i. Talk in a firm voice
 - ____j. Use identification characteristics whenever possible to let the reason-taker know that you did see the class
 - ____k. Never conclude reasons with, "For these reasons, I placed this class . . ."
 - ____l. Use good voice control, both in speed and volume
 - ____m. Stand erect, with feet aligned with shoulders
 - ____n. Present reason-taker with an accurate picture of animal

TEST

20. Arrange in order steps to follow in presenting oral reasons for placings. Write a "1" before the first step, a "2" before the second step, and so on.

- _____ a. Discuss top pair
- _____ b. Present opening statement
- _____ c. Discuss middle pair
- _____ d. Discuss bottom pair

(NOTE: Test questions 21-29 list the assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

- 21. Evaluate characteristics of a cow.
- 22. Evaluate characteristics of a bull.
- 23. Evaluate sets of written reasons for placing classes of beef cattle.
- 24. Evaluate market steers.
- 25. Judge breeding classes of beef cattle.
- 26. Judge a market class of steers.
- 27. Write sets of reasons for placing classes of beef cattle.
- 28. Give a set of oral reasons for placing a class of beef cattle.
- 29. Use resource materials to locate information about beef cattle breeds.

BEEF BREEDS AND SELECTION
UNIT II

ANSWERS TO TEST

- | | | | | |
|----|----|----|----|----|
| 1. | a. | 12 | g. | 11 |
| | b. | 3 | h. | 8 |
| | c. | 1 | i. | 7 |
| | d. | 4 | j. | 6 |
| | e. | 5 | k. | 9 |
| | f. | 10 | l. | 2 |
-
- | | | | | |
|----|----|-------------|----|-----------------|
| 2. | a. | Maine-Anjou | i. | Angus |
| | b. | Chianina | j. | Polled Hereford |
| | c. | Simmental | k. | Horned Hereford |
| | d. | Limousin | l. | Beefmaster |
| | e. | Gelbvieh | m. | Santa Gertrudis |
| | f. | Brahman | n. | Shorthorn |
| | g. | Charolais | o. | Brangus |
| | h. | Red Angus | | |
-
- | | | | | |
|----|----|------------|----|---------------|
| 3. | a. | Hind flank | j. | Loin |
| | b. | Hoof | k. | Back |
| | c. | Hind shank | l. | Crops |
| | d. | Hock | m. | Neck |
| | e. | Stifle | n. | Poll |
| | f. | Quarter | o. | Forehead |
| | g. | Hooks | p. | Face |
| | h. | Tailhead | q. | Muzzle |
| | i. | Rump | r. | Shoulder vein |

ANSWERS TO TEST

- | | | | |
|----|-----------|-----|-----------------|
| s. | Dewlap | aa. | Elbow |
| t. | Shoulder | bb. | Underline |
| u. | Brisket | cc. | Sheath |
| v. | Forearm | dd. | Foreflank |
| w. | Knee | ee. | Ribs |
| x. | Pastern | ff. | Last rib (13th) |
| y. | Dewclaw | gg. | Body |
| z. | Foreshank | | |
4. a. Type
b. Breeding and performance
c. Show classification
5. a. Long rump
b. Sharp turn over sirloin area
c. Muscling in shoulder and forearm
d. Wide stance in front and rear
e. Rounded topline
6. Answer should include any five of the following
- a. Rolls around tailhead
 - b. Flat loin and wide top
 - c. Fat over ribs behind shoulder
 - d. Deep body and full middle
 - e. Deep and wide brisket
 - f. Full flank
 - g. Square rump

ANSWERS TO TEST

- h. Deep twist
- i. Full cod
- 7.
 - a. Splay-footed
 - b. Buck-kneed
 - c. Toed-in
 - d. Calf-kneed
 - e. Sickle-hocked
 - f. Cow-hocked
 - g. Out in the hocks
 - h. Post-legged
- 8. a, d, e, f, g, k, l, m
- 9. Answer should include any ten of the following
 - a. Feminine head
 - b. Clean, neat throat and brisket
 - c. Wide chest
 - d. Large bones
 - e. Well-sprung ribs
 - f. Strong topline
 - g. Long rump
 - h. Distinct tailhead that is smooth but free of fat
 - i. Adequate muscling in stifle area
 - j. Correct leg placement
 - k. Strong pasterns
 - l. Well-developed udder and teats

ANSWERS TO TEST

10. Answer should include any ten of the following

- a. Strong, masculine head
- b. Clean throat, dewlap, and brisket
- c. Muscular forearm
- d. Rugged bones
- e. Adequate length of legs
- f. Clean flank
- g. Well-developed testicles
- h. Strong pastern
- i. Strong and correct feet and legs
- j. Adequate muscling at round and stifle
- k. Smooth, distinct tailhead
- l. Long rump
- m. Thick loin
- n. Strong back
- o. Adequate spring of rib and depth of chest
- p. Well-developed chest
- q. Long body

- 11.
- | | | |
|----|-----------|------|
| a. | Chuck | 26% |
| b. | Brisket | 6% |
| c. | Foreshank | 4% |
| d. | Plate | 5.5% |
| e. | Flank | 4% |

ANSWERS TO TEST

f.	Hind shank	3%
g.	Round	21%
h.	Rump	3%
i.	Sirloin	9%
j.	Short loin	8%
k.	Rib	8%
l.	Short ribs	1.5%

12. Process of carefully analyzing an animal's individual traits and comparing those traits to an ideal animal or standard

13.	a.	1	k.	11
	b.	6	l.	20
	c.	3	m.	12
	d.	2	n.	15
	e.	5	o.	14
	f.	4	p.	13
	g.	7	q.	16
	h.	8	r.	19
	i.	9	s.	18
	j.	10	t.	17

14. b, d, e, g, i, l, m, n, o, r, s, u

15. Identifying the judge and recording the placing

16. a. 35 points
b. 45 points

ANSWERS TO TEST

17. Presenting your opinion and justification for placing a class of livestock
18. a. 2
b. 4
c. 1
d. 3
e. 5
19. a, d, f, g, h, i, j, k, l, m, n
20. a. 2
b. 1
c. 3
d. 4
21. Evaluated to the satisfaction of the instructor
22. Evaluated to the satisfaction of the instructor
23. Evaluated to the satisfaction of the instructor
24. Evaluated to the satisfaction of the instructor
25. Evaluated to the satisfaction of the instructor
26. Evaluated to the satisfaction of the instructor
27. Evaluated to the satisfaction of the instructor
28. Evaluated to the satisfaction of the instructor
29. Evaluated to the satisfaction of the instructor

SWINE BREEDS AND SELECTION UNIT III

UNIT OBJECTIVE

After completing this unit, the student should be able to identify swine breeds and to select breeds according to type and characteristics. The student should be able to judge swine and give a set of oral reasons for placings. The student will show this knowledge by completing the assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with swine breeds and selection.
2. Identify major breeds of swine.
3. Label the parts of a hog.
4. Label wholesale cuts of pork with their proper names and desired percentages of total carcass yield.
5. Define *livestock judging*.
6. Match to their correct definitions terms associated with livestock judging.
7. List the two major traits of a market hog.
8. List characteristics of the ideal market hog.
9. Distinguish between selected swine-judging terms for desirable and undesirable traits.
10. State the purpose of the FFA placing card.
11. Compute placing scores.
12. State the purpose of giving reasons for placings.
13. Arrange in order steps to follow in taking notes for oral reasons for placings.
14. Select from a list techniques for giving oral reasons for placings.
15. Arrange in order steps to follow in presenting oral reasons for placings.
16. Evaluate a set of written reasons for placing a class of swine.

OBJECTIVE SHEET

17. Judge classes of market swine.
18. Judge a class of breeding swine.
19. Write sets of reasons for placing classes of swine.
20. Give a set of oral reasons for placing a class of swine.
21. Use resource materials to locate information about swine breeds.

SWINE BREEDS AND SELECTION
UNIT III

SUGGESTED ACTIVITIES

I. Unit contents

A. Objective sheet

B. Suggested activities

C. Transparency masters

1. TM #1 — Parts of a Hog
2. TM #2 — Wholesale Cuts of Pork and Percentages of Total Carcass Yield
3. TM #3 — Ideal Market Hog
4. TM #4 — Selecting the Modern Market Hog

D. Information sheet

E. Assignment sheets

1. Assignment Sheet #1 — Identify Major Breeds of Swine
2. Assignment Sheet #2 — Label the Parts of a Hog
3. Assignment Sheet #3 — Label Wholesale Cuts of Pork with Their Proper Names and Desired Percentages of Total Carcass Yield
4. Assignment Sheet #4 — Evaluate Swine Types
5. Assignment Sheet #5 — Use Correct Swine-Judging Terms for Desirable and Undesirable Traits
6. Assignment Sheet #6 — Use FFA Placing Cards
7. Assignment Sheet #7 — Compute Placing Scores
8. Assignment Sheet #8 — Evaluate a Set of Written Reasons for Placing a Class of Swine
9. Assignment Sheet #9 — Judge Classes of Market Swine
10. Assignment Sheet #10 — Judge a Class of Breeding Swine
11. Assignment Sheet #11 — Write Sets of Reasons for Placing Classes of Swine

SUGGESTED ACTIVITIES

12. Assignment Sheet #12 — Give a Set of Oral Reasons for Placing a Class of Swine
 13. Assignment Sheet #13 — Use Resource Materials to Locate Information About Swine Breeds
- F. Answers to assignment sheets
- G. Test
- H. Answers to test
- II. Instructor's guide
- A. Obtain materials to supplement unit.
1. Slides
 - a. *Livestock Breeds*, 42 slides. Available for purchase from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.
 - b. *Judging Livestock—FFA and 4-H Contest, Houston Livestock Show and Rodeo*, 1983. Two classes. Available for purchase from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.
 2. Books
 - a. *Oklahoma Swine Evaluation Symposium*. Order from Bill Luce, Extension Swine Specialist, Animal Science Department, Division of Agriculture, Oklahoma State University, Stillwater, Oklahoma 74078.
 - b. *OSU Livestock Judging Manual* by Jarold Callahan. Purchase from the OSU Bookstore, Student Union, Oklahoma State University, Stillwater, Oklahoma 74078.

(NOTE: It is recommended that one copy per pair of students be provided to use while training judging teams.)

 - c. *Modern Breeds of Livestock* by Hilton M. Briggs and Dinus M. Briggs. Available from Macmillan Publishing Company, Inc., 866 Third Avenue, New York, New York 10022.

(NOTE: Order at least five copies to be used by the students while doing breed research.)

SUGGESTED ACTIVITIES

3. Breed promotional material

(NOTE: Each of the breed associations has training materials available free of charge. The material can be ordered from the addresses below.)

- a. American Berkshire Association, P.O. Box 647, Lebanon, Indiana 46052, (317) 482-3043; breed publication: *Berkshire News*
 - b. American Landrace Association, Inc., Box 647, Lebanon, Indiana 46052, (317) 482-3042; breed publication: *The American Landrace*
 - c. Chester White Swine Record Association, Box 228, Rochester, Indiana 46975, (219) 223-3512; breed publication: *Chester White Journal*
 - d. Hampshire Swine Registry, 1111 Main Street, Peoria, Illinois 61606, (309) 674-9134; breed publication: *American Hampshire Herdsman*
 - e. National Spotted Swine Record, Inc., 110 Main, Bainbridge, Indiana 46105, (317) 522-6272; breed publication: *Spotted News*, Greencastle, Indiana 46135
 - f. Poland China Record Association, Box B, Knoxville, Illinois 61448, (309) 289-6786; breed publication: *The Poland China World*
 - g. United Duroc Swine Registry, 1803 West Detweiller Drive, Peoria, Illinois 61615, (309) 691-8094; breed publication: *Duroc News*
 - h. American Yorkshire Club, Box 2417, West Lafayette, Indiana 47906, (317) 463-3593; breed publication: *Yorkshire News*
4. FFA placing cards. Order from Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.
 5. Pork Meat Chart Number 06-502. Order from the National Livestock and Meat Board, 44 North Michigan Avenue, Chicago, Illinois 60611.
 6. Stenography notepads. Purchase one of these books for each class member. The books should be 6-by-9-inches and are used when teaching students to take notes for giving reasons for placings.

SUGGESTED ACTIVITIES

7. National Duroc Picture Judging Contest rules. Order enough copies so that each of your students can enter the contest. Order from United Duroc Swine Registry, 1803 West Detweiller Drive, Peoria, Illinois 61615. There is no cost for entering the contest.
 8. Poster of ideal market hog. Available from National Pork Producers Council, P.O. Box 10383, Des Moines, Iowa 50306.
- B. Make or obtain transparencies.
- (NOTE: Transparencies are available for purchase from the Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)
- C. Introduce unit by helping students focus on the importance of the swine industry in Oklahoma.

SUGGESTIONS:

- Tell students that in 1982, swine production in Oklahoma contributed more than 50 million dollars of gross income to the Oklahoma economy.
 - Ask students to compare the consumption of pork to beef. In 1981, Americans consumed 57 pounds of pork and 89 pounds of beef per person.
 - Tell students that Oklahoma imports 50 percent of its pork from other states. Use this information to help set the stage for discussing the need to produce more pork in Oklahoma.
 - Ask students to identify some commercial and purebred swine producers in the community.
 - Introduce Assignment Sheet #13. This assignment sheet is related to using resource materials to study different breeds of swine. Review questions with students. Help the students locate reference materials, and establish a date that assignment sheet should be completed.
- D. Provide students with objective sheet.
- E. Discuss unit and specific objectives.
- F. Provide students with information and assignment sheets.

SUGGESTED ACTIVITIES

- G. Discuss information and assignment sheets.

(NOTE: This unit contains thirteen assignment sheets. It is recommended that the assignment sheets be used in sequence.)

1. Make the terms in Information Sheet, Section I meaningful by illustrating the meaning of each term as it is presented.

SUGGESTIONS:

- Use the chart from the National Pork Producers to introduce the term *market hog*.
- Help students develop clear distinctions among the terms *sow*, *gilt*, *boar*, and *barrow*.
- Help students distinguish between using the term *cuts* when judging a class of animals and when discussing carcass cuts.

2. Use Information Sheet, Section II to help students learn to identify the breeds of swine. Have students complete Assignment Sheet #1.

SUGGESTIONS:

- Show slides, *Livestock Breeds*, and discuss breed characteristics. Stress color patterns as well as body and head characteristics.
- Develop a bulletin board, using pictures of different breeds received from breed associations.

3. Use Information Sheet, Section III with Transparency #1 to help students learn the parts of a hog. Have students complete Assignment Sheet #2.

SUGGESTION:

- Stress the importance of calling the parts of a hog by their correct names. Tell students that judges need to use the correct names of different parts when giving their reasons for placings.

4. Use Information Sheet, Section IV with Transparency #2 to help students identify wholesale cuts of pork and their percentages of total carcass yield. Have students complete Assignment Sheet #3.

SUGGESTIONS:

- Inform students that commercial producers market live animals by the hundredweight but that packing plants market carcasses by wholesale and retail cuts. The carcass yield determines the dollar value of the carcass.

SUGGESTED ACTIVITIES

- Help students develop a knowledge of carcass value in terms of dollars by having students do some math calculations. A 240-pound market hog hangs up a 175-pound carcass, which represents a 73 percent dressing yield.
 - Explain to students that by using the different percentages of the wholesale cuts and by multiplying the percentage of the desired cut by the carcass weight, they can determine the total pounds of wholesale cuts available for sale.
 - Take the students on a field trip to a supermarket to examine wholesale and retail cuts of pork. Have students price retail cuts. This will help students develop a knowledge of the value of wholesale cuts and help them realize that the pork producer wants to produce market hogs that have a high percentage of desirable wholesale cuts.
 - Use the chart from the National Livestock and Meat Board to help students identify wholesale and retail cuts.
5. Use Information Sheet, Section V to stress the importance of learning to judge livestock.

SUGGESTIONS:

- Ask a student from the senior class to talk to the students about livestock judging. Have this student relate how judging has helped him or her.
 - Ask a swine producer to talk to the class about how to analyze an animal's individual traits.
6. Use Information Sheet, Section VI to help students learn to use correct terms when judging and selecting swine.

SUGGESTION:

- Help students learn the meaning of each term as it is presented. Select slides from the slide sets to illustrate the meanings of such terms as *trimness*, *scale*, *quality*, and *type*.

SUGGESTED ACTIVITIES

7. Combine Information Sheet, Sections VII and VIII and Transparencies #3 and #4 to help students develop ideas of what a market hog should look like today. Have students complete Assignment Sheet #4.

SUGGESTIONS:

- Talk to students about swine types, and give an overview of how the desired swine type has changed through the years. Stress that today importance is being placed equally on production traits and carcass traits.
 - Use the poster of the ideal market hog to show characteristics of today's desired swine type.
 - Take a field trip and have the students identify and evaluate swine for type. Students may want to take the completed Assignment Sheet #4 to use as reference and comparison.
8. Use Information Sheet, Section IX and Transparency #4 to help students learn swine-judging terms to use for desirable and undesirable traits. Have students complete Assignment Sheet #5.

SUGGESTIONS:

- Tell students why the swine-judging terms are classified for desirable and undesirable traits. Illustrate how the terms are used when evaluating an individual animal and making comparisons.
 - Show students how to tie terms into phrases. For example, "A heavier-structured, stouter, more-durable gilt, with more volume."
 - Divide the class into two groups. Have one group be responsible for using terms for desirable traits and the other group be responsible for using terms for undesirable traits. When the group using terms for desirable traits calls out a term, the group using terms for undesirable traits calls out its opposite.
9. Combine Information Sheet, Sections X and XI to help students learn to use FFA placing cards and to compute placing scores. Have students complete Assignment Sheets #6 and #7.

SUGGESTIONS:

- Tell students how the FFA placing card is used. Explain the card's purpose and show how to fill out the card correctly.
- Put an example on the chalkboard and have the students place the example on an FFA placing card.
- Use the chalkboard to demonstrate how to compute placing scores.

SUGGESTED ACTIVITIES

10. Use Information Sheet, Section XII to teach the purpose of giving reasons for placings. Have students complete Assignment Sheet #8.

SUGGESTION:

- Record the reasons from Assignment Sheet #8 and play back to the class. This activity will give the students an example of how oral reasons should be given.

11. Combine Assignment Sheets #9 and #10 and have students practice their judging skills.

SUGGESTIONS:

- Have upperclass members put together a market class and a breeding class for the students to judge. Tell students to take a set of notes on each class. The next day they will write reasons for their placings in both classes.
 - Use the upperclass members as reason-takers, and let the students give a set of oral reasons for their market and breeding class placings.
 - Distribute to the class copies of the National Duroc Picture Judging Contest rules and allow the class to judge the Duroc classes. Collect the placings and forward the entries to the National Duroc Association for scoring.
12. Combine Information Sheet, Sections XIII through XV to teach students how to take notes for and how to present oral reasons. Have the students complete Assignment Sheets #11 and #12.

SUGGESTIONS:

- Tell students that learning to give oral reasons will improve their public speaking ability.
- Distribute stenography notepads to the class. Put an example of a set of notes on the chalkboard, and have students copy the notes into their steno books. Show students how to use abbreviations when taking notes.
- Ask a junior or senior to give a set of oral reasons to the class. Have the students to use Section XIV of the Information Sheet to determine whether the junior or senior used the correct techniques in presenting the oral reasons for placings.
- Put together a judging class that is very easy for the students to place. Have students use this class for writing their reasons as specified in Assignment Sheet #11.

SUGGESTED ACTIVITIES

13. Collect and discuss Assignment Sheet #13.

SUGGESTIONS:

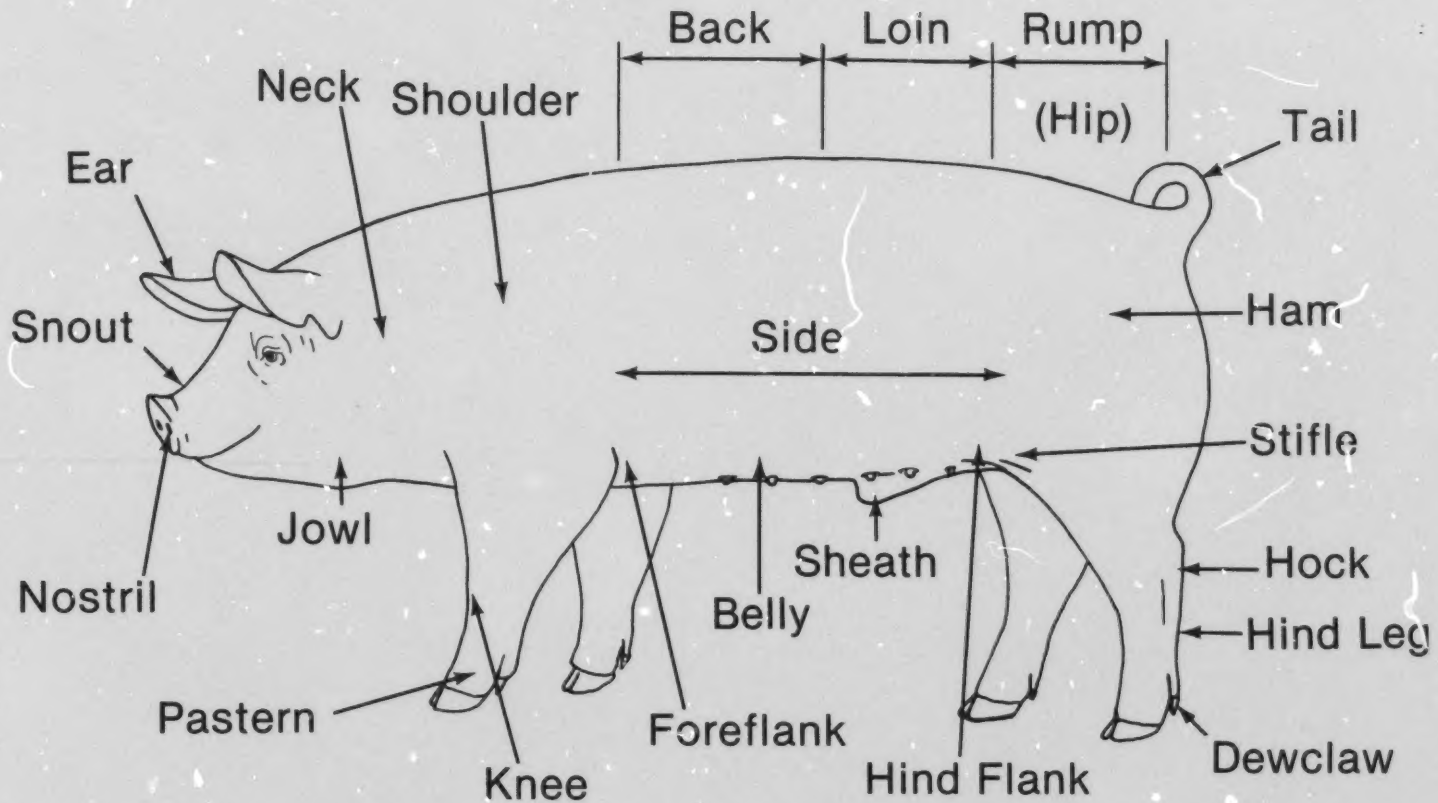
- Have students give oral reports on their research findings.
- Have students share their breed findings with the class in a question and answer session.

H. Give test.

III. Unit references

- A. Briggs, Hilton M., and Dinus M. Briggs. *Modern Breeds of Livestock*. New York: Macmillan Publishing Co., Inc., 1980.
- B. Callahan, Jarold. *OSU Livestock Judging Manual*. Stillwater, Oklahoma: Oklahoma State University, 1982.
- C. *Oklahoma Swine Evaluation Symposium Report*. Stillwater, Oklahoma: Animal Science Department, Division of Agriculture, Oklahoma State University, 1983.

Parts of a Hog



Adapted with permission of the National Pork Producers Council.

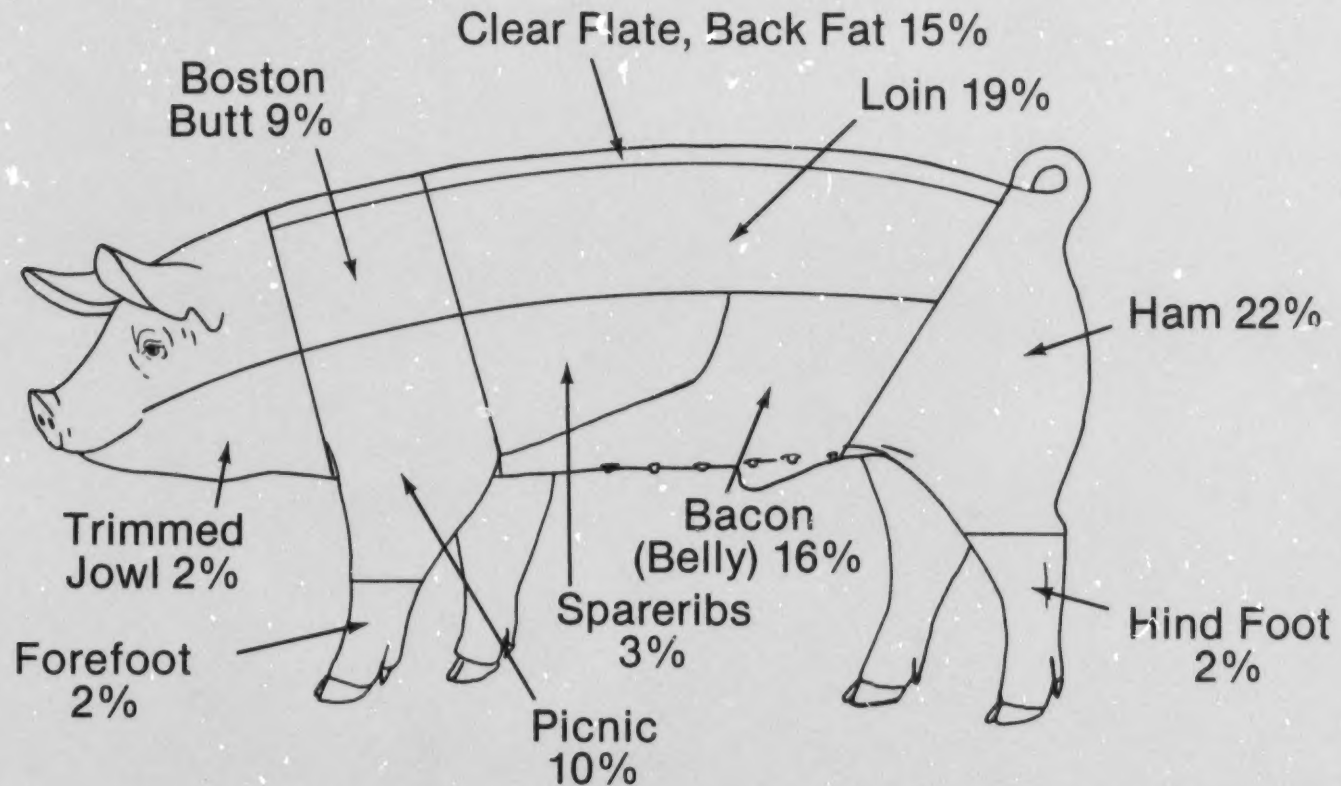
TM #1

582

583

VO AG 1 - 257-D

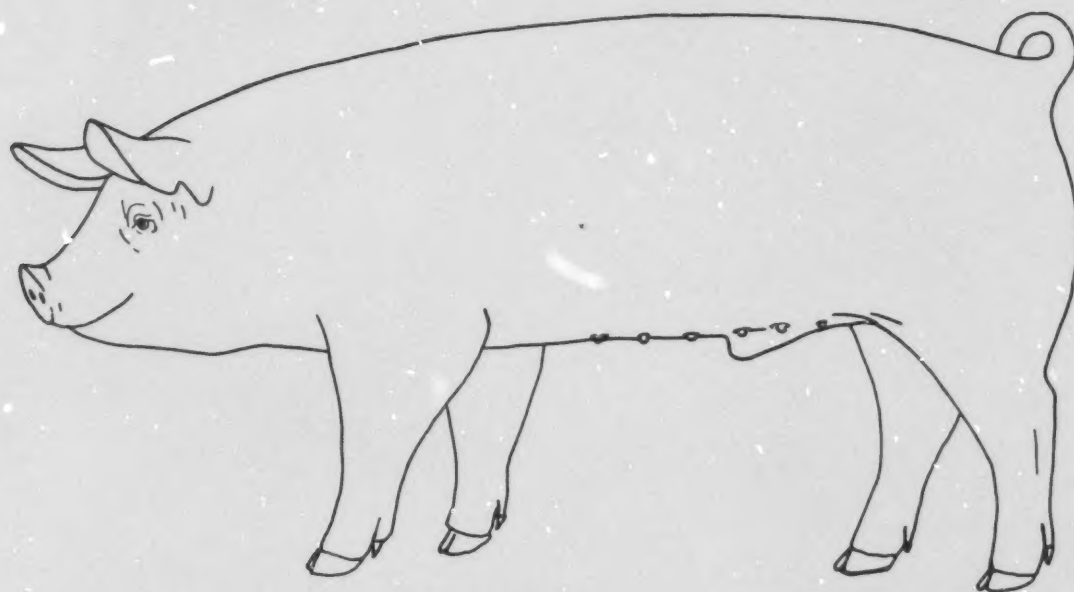
Wholesale Cuts of Pork and Percentages of Total Carcass Yield



Adapted with permission of the National Pork Producers Council.

Ideal Market Hog

Symbol — NPPC Model Hog



Used with permission of the National Pork Producers Council.

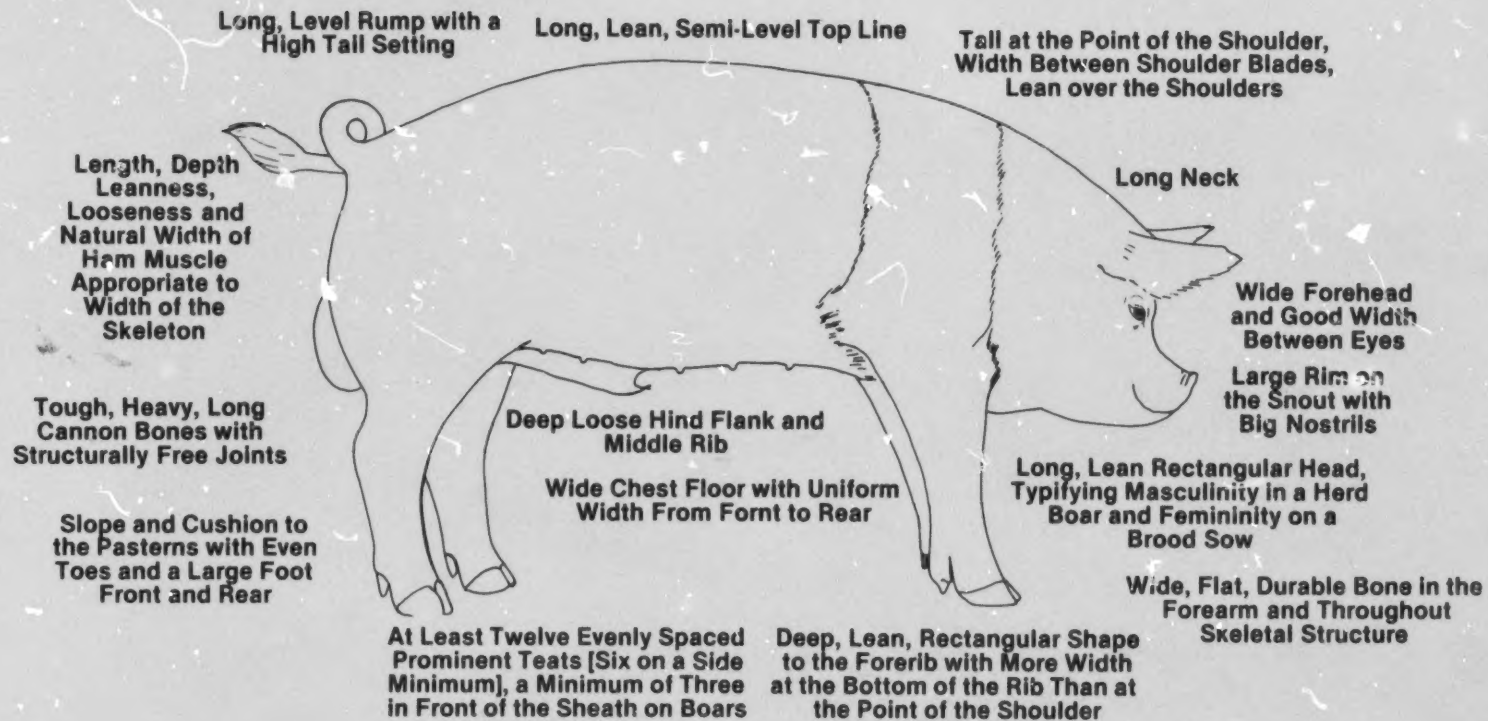
TM #3

586

587

VO AG 1 - 261-D

Selecting the Modern Market Hog



Used with permission of Hampshire Swine Registry.

SWINE BREEDS AND SELECTION UNIT III

INFORMATION SHEET

I. Terms and definitions

- A. Sows — Mature female swine that have produced a litter of pigs
- B. Boars — Uncastrated male swine
- C. Gilts — Young female swine that have not reproduced
- D. Barrows — Male swine that have been castrated
- E. Market hogs — Swine raised for slaughter at a weight of 240 pounds
- F. Purebred producer — Person who breeds animals whose ancestors are all of the same breed; animals may or may not be pedigreed
- G. Commercial producer — Person who breeds animals for commercial markets; usually produces crossbreeds

II. Major breeds of swine (Figures 1-8)

A. Duroc

(NOTE: Characteristics of the Duroc are a red color, although color may vary from a light golden to a very dark red; medium-length body with a slightly dishd face; and drooped ears.)

FIGURE 1



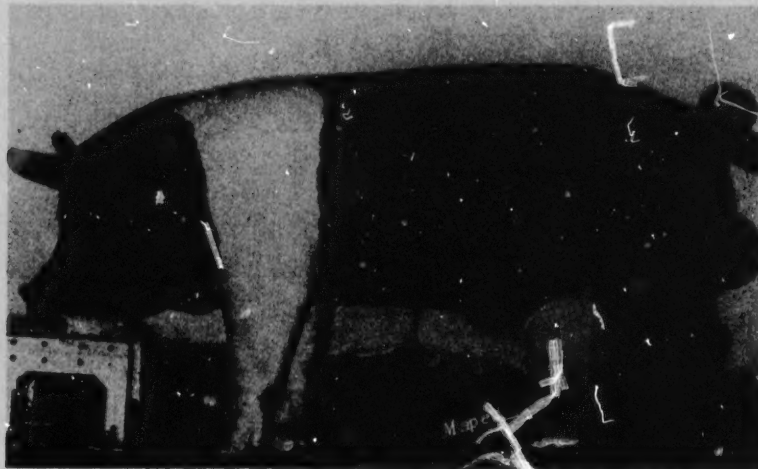
Courtesy of United Duroc Swine Registry.

INFORMATION SHEET

B. Hampshire

(NOTE: The main characteristics of the Hampshire are a black, medium-length body with a white belt encircling the shoulders, front legs, and feet.)

FIGURE 2



Courtesy of Hampshire Swine Registry.

C. Poland China

(NOTE: The main characteristics of the Poland China are a black body with six white points [feet, nose, tail], and drooped ears.)

FIGURE 3



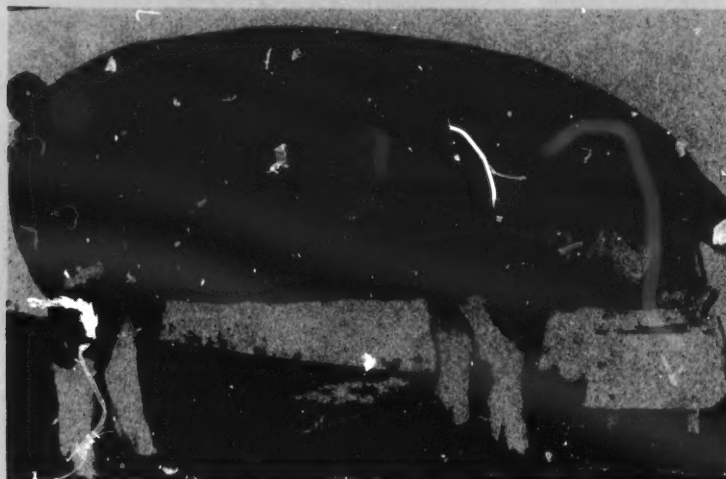
Courtesy of Poland China Record Association.

INFORMATION SHEET

D. Spots

(NOTE: The main characteristics of the Spots breed are a body that is spotted 50 percent white and 50 percent black, and drooping ears.)

FIGURE 4

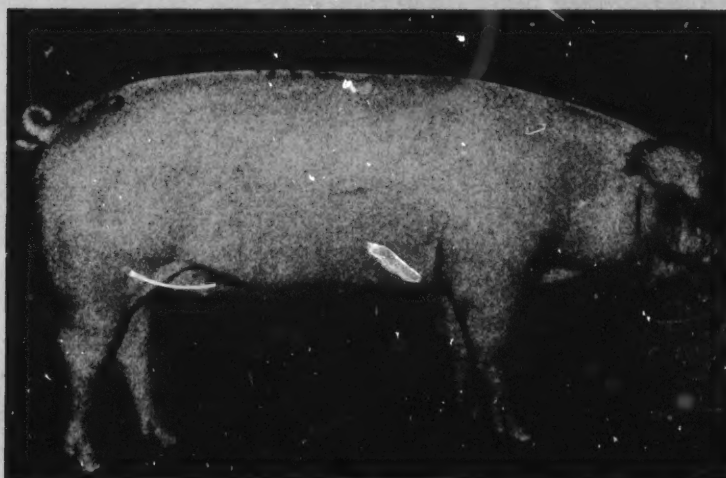


Courtesy of National Spotted Swine Record, Inc.

E. Chester White

(NOTE: The main characteristics of the Chester White are a white body and drooping ears.)

FIGURE 5



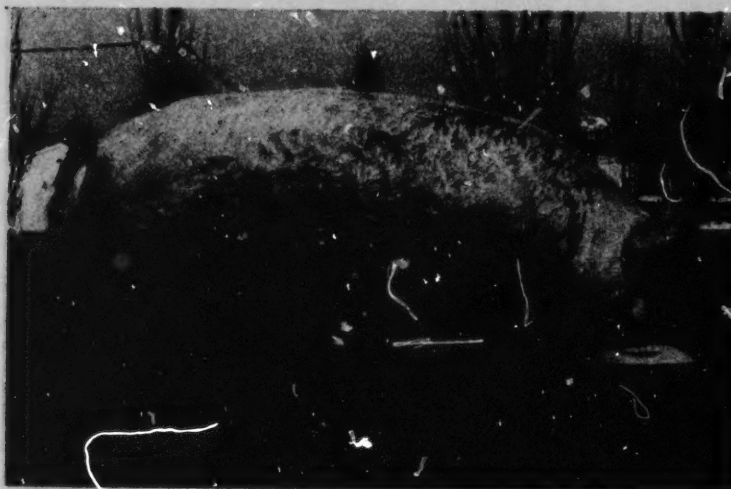
Courtesy of Chester White Swine Record Association.

INFORMATION SHEET

F. Yorkshire

(NOTE: The main characteristics of the Yorkshire are a white body and erect ears.)

FIGURE 6



Courtesy of American Yorkshire Club.

G. Berkshire

(NOTE: The characteristics of the Berkshire are a black body with six white points [feet, face, tail], and erect ears.)

FIGURE 7



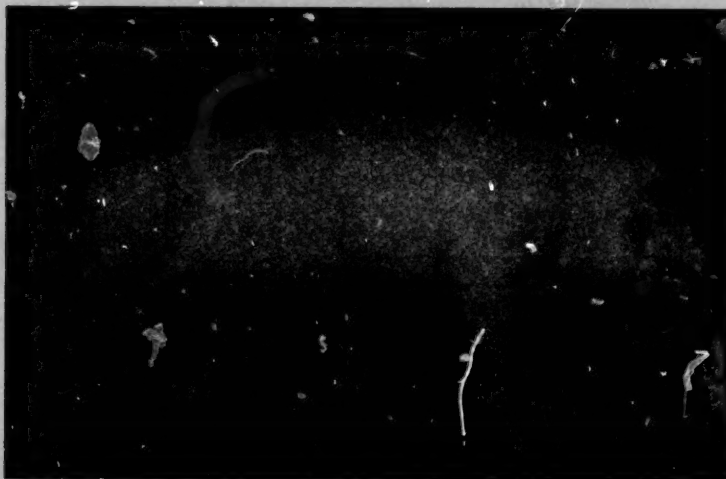
Courtesy of American Berkshire Association.

INFORMATION SHEET

H. Landrace

(NOTE: The main characteristics of the Landrace are a white, extremely long body, and large drooping ears.)

FIGURE 8

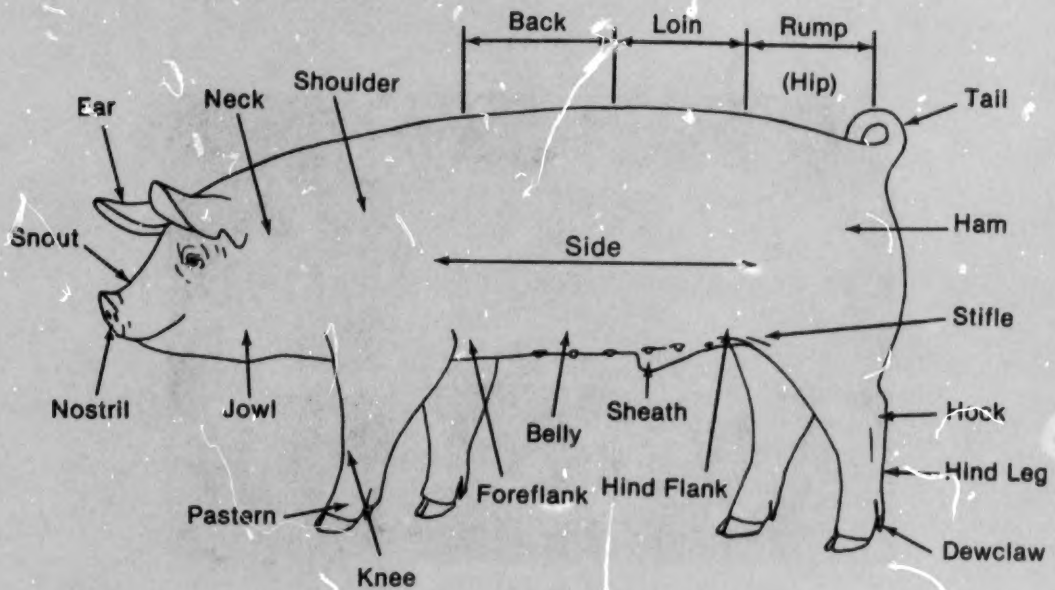


Courtesy of American Landrace Association.

INFORMATION SHEET

iii. Parts of a hog (Figure 9)

FIGURE 9

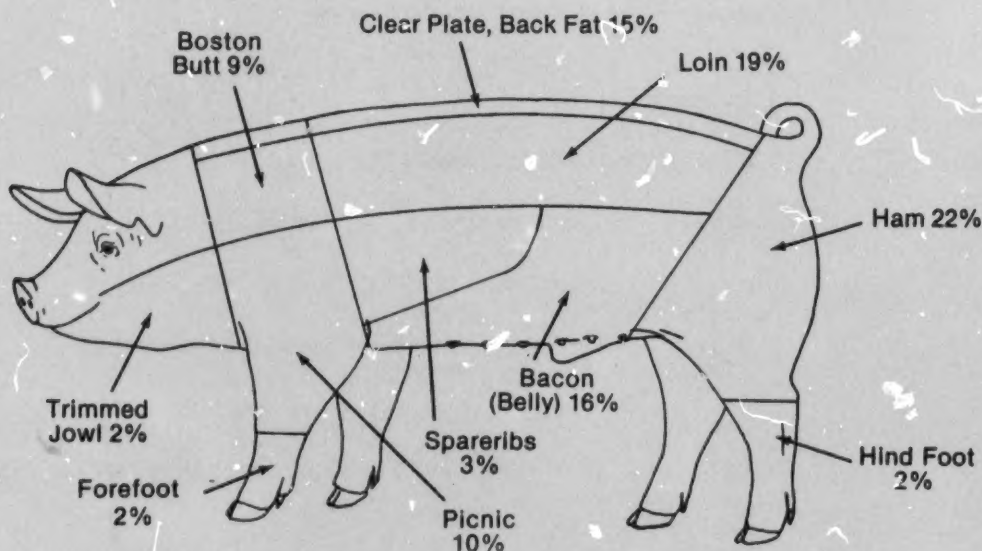


Adapted with permission of the National Pork Producers Council.

INFORMATION SHEET

IV. Wholesale cuts of pork and percentages of total carcass yield (Figure 10)

FIGURE 10



Adapted with permission of the National Pork Producers Council.

V. Livestock judging — Process of carefully analyzing an animal's individual traits and comparing those traits to an ideal animal or standard

(NOTE: In a livestock judging contest, there are four animals in a class. The judge analyzes each of the four animals individually and then compares each animal to other animals in the class.)

VI. Terms associated with livestock judging

- A. Type — General term commonly defined as a combination of characteristics that make an animal most useful for a specific purpose

(NOTE: Type is determined by the general form or shape of an animal.)

- B. Meatiness or muscling — High proportion of volume in the areas of high-priced cuts

INFORMATION SHEET

- C. Quality — Overall smoothness, blending of shoulders, and substance of head and bone
- D. Trimness — Freedom from excess finish or fat
- E. Soundness — Quality of being correct on the feet and legs as opposed to being unsound

(NOTE: This term is used primarily with breeding stock.)

- F. Growthiness — Condition of having appropriate size and weight for age
- G. Scale — Size of animal as determined by skeletal structure

(NOTE: Scale should be independent of weight.)

- H. Ruggedness — Quality of having large bones and frame
- I. Broodiness — Combination of characteristics indicating that the female will be a good mother

(NOTE: This term is used only with breeding stock.)

- J. Breed character — Traits that distinguish one breed from another

(NOTE: Breed character refers to characteristics of the animal's head, such as shape, length and dish of face, and set of ears.)

- K. Femininity — Traits distinguishing a female from a male
- L. Masculinity — Traits distinguishing a male from a female

- M. Grant — Recognition that an animal has desirable traits but that these traits are not acceptable to be used any higher in class

VII. Major traits of a market hog

(NOTE: Some people disagree about the percentages assigned to each trait, but most agree that the traits are important and should be used when evaluating market hogs.)

- A. Production — 50 percent emphasis

(NOTE: *Production* refers to a hog's ability to reproduce and grow.)

- B. Carcase — 50 percent emphasis

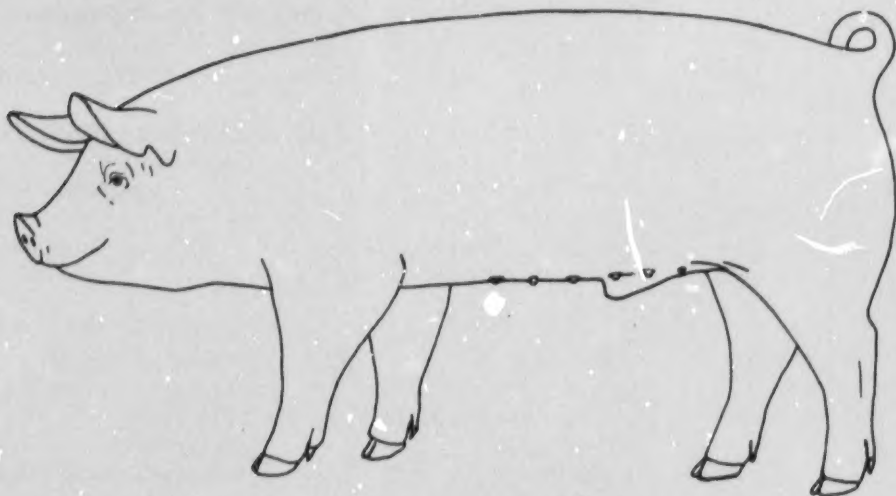
INFORMATION SHEET

VIII. Ideal market hog characteristics (Figure 11)

(NOTE: The characteristics of the ideal barrow were established by a task force of the National Pork Producers Council. The barrow is referred to as "Symbol.")

EXAMPLE:

FIGURE 11



Symbol—NPPC Model Hog

Used with permission of the National Pork Producers Council.

- A. Raised in litter of ten pigs
- B. Reached market weight in 150 days
- C. Has market weight of 240 pounds
- D. Has 32-inch-long carcass

(NOTE: Carcass length is determined by measuring from the first rib to the hipbone, or H-bone.)

- E. Has 0.70 inch of back fat at tenth rib
- F. Has 5.8 square inches of loin eye

INFORMATION SHEET

IX. Swine-judging terms for desirable and undesirable traits (Table 1)

(NOTE: The terms in this section of the Information Sheet were taken from the *OSU Livestock Judging Manual* by Jarold Callahan.)

TABLE 1

AREA	DESIRABLE	UNDESIRABLE
Frame	Larger-framed Bigger-scaled Skeletal extension Longer-rumped Larger or more correct Longer-sided Taller-fronted Three-dimensional frame or capacity (long, deep, and wide)	Smaller-framed Smaller-scaled Small-framed, short-bodied, low-fronted Shorter-rumped Smaller-framed Shorter-bodied or -sided Low-fronted Short, narrow, shallow
Volume and durability	Heavier-boned Heavier-structured Heavier-skeletoned Bigger-footed Stouter-headed Bigger, wider-fronted More width between the blades (scapulas) More natural width and structure down the top, between the legs Tougher, more durable Bigger-footed, heavier-boned More width through lower body cavity Deeper-bodied Larger volume More capacity More total inside dimension More width through chest Deeper, looser flank Deeper middle Looser-flanked Bolder-sprung More width through center part of body Deeper, more rectangular forerib	Light-boned Light-boned, fine-featured Light-boned, frail Small-footed Narrow-headed, fine-featured Narrow-chested, narrow-made Narrow-topped Narrow-made, narrow-topped Narrow, light-skeletoned Small-footed, light-structured Pinched in rib, narrow through lower body cavity Shallow-bodied, high-flanked Shallow-bodied, narrow-made Shallow, round-bodied, narrow Shallow, round-bodied, narrow Narrow-fronted, less volume High in flank Shallow-bodied, shallow-flanked Tight-flanked Flat-ribbed, narrow-chested Flat-ribbed, narrow Shallow, round-bodied

INFORMATION SHEET

AREA	DESIRABLE	UNDESIRABLE
Skeletal structure and movement	More level-topped Flatter-topped Level and longer-rumped Higher and more correct in tail setting Freer-moving Sounder-footed Freer-wheeling More mobile, easier-moving Took a longer stride up front and/or behind More correct set or slope to shoulder or scapula More flex or cushion to knee or pastern Moved out with more cushion up front More flex and give to rear hock More even toe size Looser-structured Looser-constructed More flexible in skeleton More flexible or looser in spine More confinement-adaptable More easily adapted to confinement	High-topped High-topped Short, steep-rumped Steep-rumped and low tail setting Unsound; restricted in movement Unsound; restricted in movement Unsound; restricted in movement Unsound; restricted in movement Short-stepping or striding; restricted in movement Steep, straight, or too far forward in shoulder or scapula Straight-fronted, stiff-moving, buck-kneed, over at knees Straight-fronted, stiff-moving, buck-kneed, over at knees Post-legged, straight in hock and pastern Smaller inside toe, uneven toe size Tight-structured Tight-structured Tighter, more rigid in structure High-topped, rigid Unsound, structurally unsound, less longevity in confinement situation Unsound, structurally unsound, less longevity in confinement situation

INFORMATION SHEET

AREA	DESIRABLE	UNDESIRABLE
Feminity and underlines	Longer-necked Longer-faced or -headed More feminine-headed (gilts) More feminine-fronted (gilts) More productively designed (gilts) Broodier (gilts) More prominent underline (gilts or boars) More evenly spaced underline (gilts or boars) More refined, higher-quality underline (gilts or boars) More pin-shaped nipple (gilts or boars) More functionally correct underline Started farther forward with underline (boars or gilts)	Shorter-necked Shorter-faced or -headed More masculine, short-headed, coarse or masculine Short-necked, short-headed, tight-structured Unsound, poor underline Unsound, poor underline Inverted teat, pin teat, blunt teat; less prominent Poorly spaced underline Blunt or coarse, low-quality underline Blunt or coarse, low-quality underline Inverted, pin, blind teats; low-quality, poor spacing Started farther back with underline
Muscling	Heavier-muscled Longer-muscled More width of top and rump Longer, more level rump and deep ham More width and natural muscle volume More muscle volume More natural structure and total muscle dimension More total muscle volume spread over a bigger, wider skeleton Natural thickness of top Wider-topped	Lighter-muscled Short, tight muscle structure Narrow-topped and -rumped Less width and volume of ham Narrow, light-muscled Narrow, light-muscled Narrow, light-muscled Narrow, light-muscled Narrow-topped Narrow-topped

INFORMATION SHEET

AREA	DESIRABLE	UNDESIRABLE
Fat cover	Trimmer Leaner Leaner down top, loin edge Cleaner, trimmer through jowl and elbow pocket Trimmer-finished (barrows) Trimmer-conditioned (gilts) Free of grease down loin edge Free of grease over point of shoulder Exhibited more shoulder blade action	Fatter, overfinished, wasty, carried excess condition Fatter, overfinished, wasty, carried excess condition Excessive grease down loin area Carried excess waste through jowl and elbow pocket Overfinished, wasty Overconditioned, wasty Wasty down top and loin edge Wasty over shoulder and top Wasty over shoulder and top
Market hogs only	More versatile or flexible in market weight; later-maturing Better combination of production and carcass characteristics Should yield a heavier-muscled carcass Should yield a carcass with more muscle Should hang a trimmer, meatier, more muscular carcass Should hang a carcass with more spread and thickness of loin, combined with a longer, deeper, thicker ham Should yield a carcass with a higher percentage of lean cuts Should yield a carcass with a higher ratio of lean to fat Should hang a trimmer carcass with less waste trim Should hang a longer, trimmer carcass with more muscle	Should hang the narrowest, lightest-muscled carcass of the class Should yield a wastier, more overfinished carcass Should yield a carcass with less muscle Should hang a short, wasty carcass with excess waste trim

INFORMATION SHEET

- X. Purpose of the FFA placing card — Identifying the judge and recording the placing (Figure 12)

(NOTE: Always use pencil to complete the card, and write clearly. An incorrectly written card can cause a team to lose a contest.)

EXAMPLE:

FIGURE 12

FFA PLACING CARD		1-2-3-4	
		1-2-4-3	
Contestant's Initial	No.	1-3-2-4	
		1-3-4-2	
Class		1-4-2-3	
		1-4-3-2	
		2-1-3-4	
		2-1-4-3	
		2-3-1-4	
		2-3-4-1	
		2-4-1-3	
		2-4-3-1	X
		3-1-2-4	
		3-1-4-2	
		3-2-1-4	
		3-2-4-1	
		3-4-1-2	
		3-4-2-1	
		4-1-2-3	
		4-1-3-2	
		4-2-1-3	
		4-2-3-1	
Placing Grade		4-3-1-2	
		4-3-2-1	
Reason Grade			

INFORMATION SHEET

XI. Computing placing scores

(NOTE: There are always four animals in a livestock class. The maximum score possible on a class is fifty. A score of fifty points represents a perfect placing, an exact match with the official placings on the class. After the class is judged and the official placings have been announced, you should be able to compute your score. Cuts, or point variations, are made between the different animals in the class. Use simple addition and subtraction to calculate your score.)

A. Compare your placing to official placing

EXAMPLE:	Official Placing	Your Placing
	1 - 4 - 3 - 2	1 - 2 - 3 - 4
	2 5 4 (cuts)	

B. Write your placings as pairs

(NOTE: To help figure your cuts, write your placings in three columns as in the example.)

EXAMPLE: $\frac{1}{2}$ $\frac{2}{3}$ $\frac{3}{4}$
 $\frac{1}{3}$ $\frac{2}{4}$
 $\frac{1}{4}$

C. Use cuts to calculate points

1. Compare each pair you placed to the corresponding pair in the official placing
2. Count zero points for each matching pair
3. Count points for pairs that do not match by adding cuts that fall between the paired numbers
4. Total the points for all pairs

EXAMPLES: Official placing 1 - 4 - 3 - 2 Your placing 1 - 2 - 3 - 4
 2 5 4

$\frac{1}{2} = 0$ points $\frac{2}{3} = 4$ points $\frac{3}{4} = 5$ points

1/3 = 0 points 2/4 = 9 points

1/4 = 0 points

Total of points $4 + 9 + 5 = 18$ points

INFORMATION SHEET

- D. Subtract total of points from 50 to find placing score

EXAMPLE: $50 - 18 = 32$ points
Your score = 32

(NOTE: If you placed the class 4 - 1 - 3 - 2, you would have had a top switch, which would have cost you two points, for a score of 48. With a placing of 1-3-4-2, the 3 and 4 switch would have cost you 5 points, for a score of 45.)

- XII. Purpose of giving reasons for placings — Presenting your opinion and justification for placing a class of livestock

(NOTE: It is essential that you learn to communicate with others in a manner that both parties understand. Giving reasons for your placings provides you with the opportunity to organize your thoughts in a confident, precise, and logical manner.)

- XIII. Steps to follow in taking notes for oral reasons for placings

(NOTE: It is important to learn to take good notes for giving oral reasons for your placings. You might have to judge several classes in a day but give the reasons for your placings at a later time. Taking good notes enables you to present a sound set of oral reasons. It is suggested that you carry a 6-by-9-inch stenographer's spiral notebook and a pencil for use in writing your notes. See Figure 13.)

INFORMATION SHEET

EXAMPLE:

FIGURE 13

	<i>Duroc Gift Reasons for Placing 4-1-2-3</i>
	<i>Criticisms and Identification Points</i>
1	<i>Sandy-colored, shallow-bodied, tight-ribbed; narrow end to end</i>
2	<i>High-topped, steep-fronted, poor-moving</i>
3	<i>Light-muscled, narrow-made, fine-featured; least adaptable to confinement</i>
4	<i>Stiff-fronted</i>
4 1/2	<i>Wider-made, heavier-muscled, heavier-boned, longer-bodied; uniform underline</i>
1 1/4	<i>More mobile, leaner - designed</i>
1 1/2	<i>Exterior design; leveler-made, looser, give and flex to both front and rear legs</i>
2 1/1	<i>Deeper-bodied; depth at front and rear flank</i>
2 1/3	<i>Heavier-structured, stouter-featured, heavier- boned, larger-framed, trimmer, wider-made</i>
3 1/2	<i>Higher-quality; more evenly spaced under- line</i>

INFORMATION SHEET

- A. Identify the class
- B. Write your placing at the top of the page
- C. Write the numbers 1 through 4 down the side of the page, leaving approximately three lines between the numbers
- D. Take notes on each animal to identify strong points and criticisms of each
- E. Take notes by pairs, giving advantages as well as grants

XIV. Techniques for giving oral reasons for placings

- A. Speak with a clear, powerful voice
- B. Open reasons with a precise opening statement
- C. Never carry notes into reason room
- D. Stand erect, with feet and shoulders aligned
- E. Stand approximately 4 to 8 feet away from reason-taker
(NOTE: Distance will depend on room size.)
- F. Talk in a firm voice
(NOTE: Avoid shouting.)
- G. Use good voice control, both in speed and volume
(NOTE: Emphasis on certain points is very important when giving reasons for placings.)
- H. Present reason-taker with accurate picture of the animal
- I. Avoid body movement
(NOTE: Some head movement is acceptable.)
- J. Use identification characteristics whenever possible to let reason-taker know that you saw the class
- K. Look reason-taker squarely in the eye
- L. Stay within the allowable two minutes
(NOTE: The length of the oral reasons for placings should be from one minute and twenty seconds to one minute and forty-five seconds.)

INFORMATION SHEET

- M. Avoid using more than three terms in succession
- N. Never conclude reasons with, "For these reasons, I placed this class . . ."

XV. Steps in presenting oral reasons for placings

(NOTE: In order to give oral reasons, a class of four animals is divided into three pairs: a top pair, a middle pair, and a bottom pair. Follow the basic outline for a set of reasons for a placing of 1-2-3-4.)

A. Present opening remarks

EXAMPLES: Give name of class and how you placed it; give outstanding good points and criticisms of overall class.

B. Discuss top pair

EXAMPLES: Give reasons for placing 1 over 2, using comparative terms; give grants for 2 over 1, using comparative terms to point out advantages of 2 over 1 (in close placings, several grants would be desirable as long as they are true); give criticisms of 2, using descriptive terms. (Always criticize an animal on its own merits rather than by comparing it to the animal placed above it.)

C. Discuss middle pair

EXAMPLES: Give reasons for placing 2 over 3; give grants for 3 over 2; give criticisms of 3.

D. Discuss bottom pair

EXAMPLES: Give reasons for placing 3 over 4; give grants for 4 over 3; give criticisms of 4.

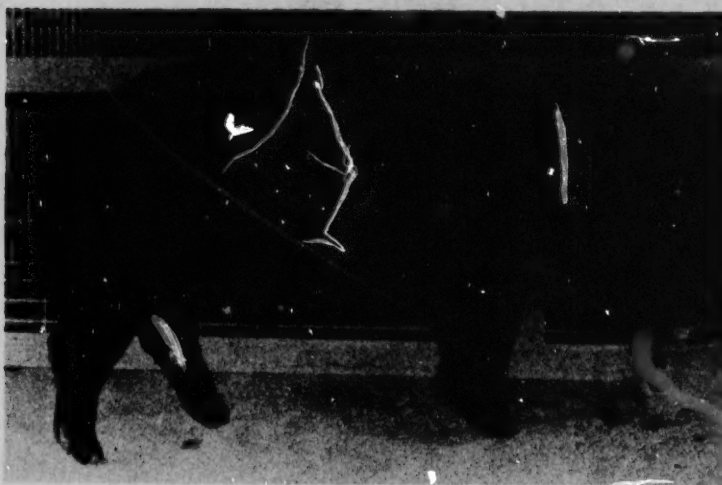
**SWINE BREEDS AND SELECTION
UNIT III****ASSIGNMENT SHEET #1 — IDENTIFY MAJOR BREEDS OF SWINE**

NAME _____

SCORE _____

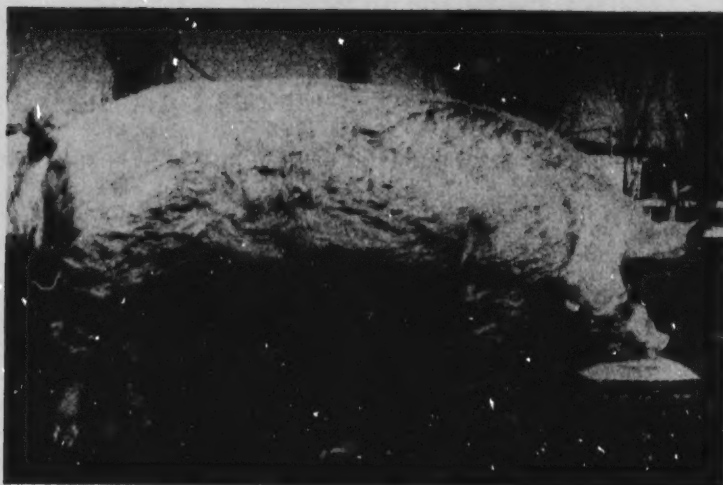
Whether purchasing or judging swine, you must be able to call the breeds by their correct names.

Shown below and on the following pages are photographs of different breeds of swine. Identify each breed by writing its correct name in the blank below the photograph.



A. _____

ASSIGNMENT SHEET #1

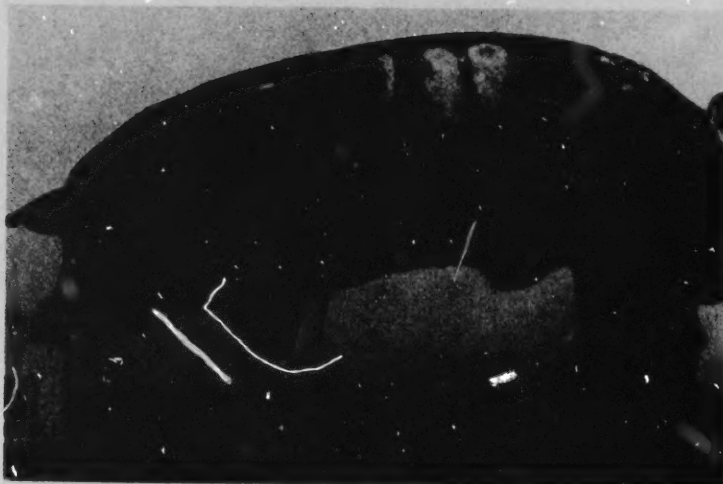


B. _____



C. _____

ASSIGNMENT SHEET #1



D. _____



E. _____

ASSIGNMENT SHEET #1



F. _____



G. _____

ASSIGNMENT SHEET #1



H. _____

Photographs in this assignment sheet courtesy of National Spotted Swine Record, Inc.; Poland China Record Association; Hampshire Swine Registry; United Duroc Swine Registry; American Yorkshire Club; American Berkshire Association; and American Landrace Association.

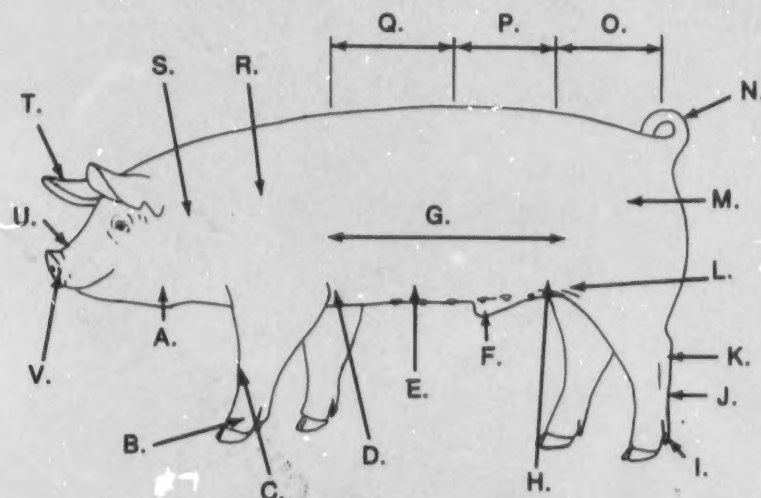
SWINE BREEDS AND SELECTION UNIT III

ASSIGNMENT SHEET #2 — LABEL THE PARTS OF A HOG

NAME _____ SCORE _____

To judge, you must be able to identify the parts of a hog. You will be making reference to different parts, and you must call the parts by their correct names.

Label the parts of the hog illustrated below. Write the correct names in the corresponding blanks.



Adapted with permission of the National Pork Producers Council.

A. _____	L. _____
B. _____	M. _____
C. _____	N. _____
D. _____	O. _____
E. _____	P. _____
F. _____	Q. _____
G. _____	R. _____
H. _____	S. _____
I. _____	T. _____
J. _____	U. _____
K. _____	V. _____

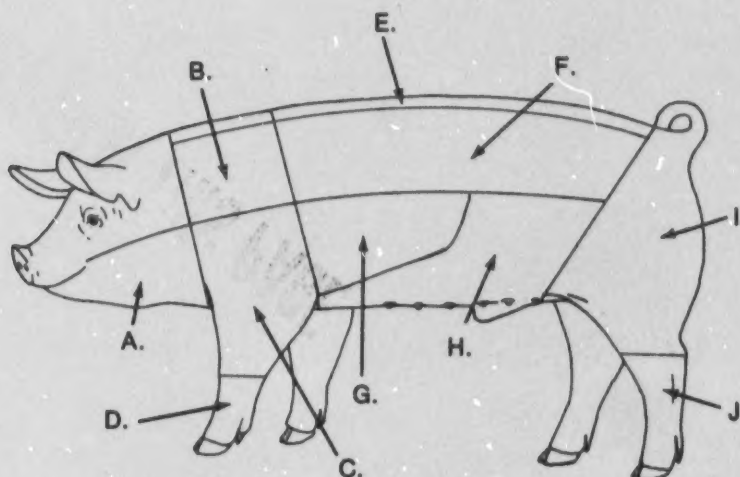
SWINE BREEDS AND SELECTION UNIT III

ASSIGNMENT SHEET #3 — LABEL WHOLESALE CUTS OF PORK WITH THEIR PROPER NAMES AND DESIRED PERCENTAGES OF TOTAL CARCASS YIELD

NAME _____ SCORE _____

Many things must be considered when judging a class of market hogs, but the most important is carcass quality and volume. The carcass is composed of high-priced and low-priced cuts. The purpose of this assignment is to enable you to identify wholesale cuts of pork.

Using the drawing below, label the wholesale cuts of pork by writing the correct names and desired percentages of carcass yield in the corresponding blanks.



Adapted with permission of the National Pork Producers Council.

A.	_____	_____ %	F.	_____	_____ %
B.	_____	_____ %	G.	_____	_____ %
C.	_____	_____ %	H.	_____	_____ %
D.	_____	_____ %	I.	_____	_____ %
E.	_____	_____ %	J.	_____	_____ %

SWINE BREEDS AND SELECTION UNIT III

ASSIGNMENT SHEET #4 — EVALUATE SWINE TYPES

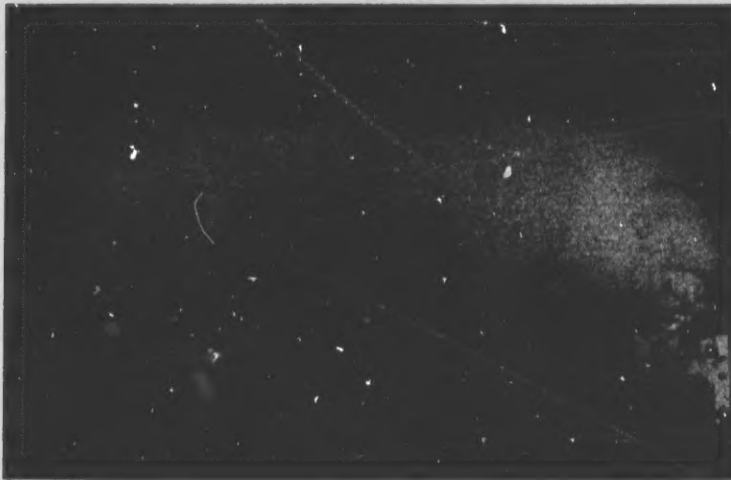
NAME _____

SCORE _____

The swine industry has gone through many changes over the past several years. These changes run in cycles, and the cycles vary from six to ten years. Several individuals impact on these changes. The consumer of swine products is the primary individual who impacts on the change; however, purebred producers also have some impact on the changes. When lard was of prime concern to the consumer, the swine producer produced a hog that was very fat. When the need for lard went away and the consumer wanted more lean, red pork, the swine producer changed the type and started producing a leaner, more muscled hog. Some individuals referred to this type of hog as a *fat-free* animal. This swine type was popular from 1965 to 1976. During this period, swine producers started raising hogs in total confinement; however, they found that this "fat-free" type of animal did not adapt very well to total confinement. Such things as soundness, longevity, and durability became a problem. So, in 1977, the industry once again started making changes. Today producers are producing an animal referred to as a *production-type animal*, and evaluation is made equally on production traits and carcass traits.

Shown below and on the following pages are several pictures of swine types. Below each picture write the desirable and undesirable traits the animal exhibits.

A.



Courtesy American Landrace Association, Inc.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #4

B.



Courtesy of Oklahoma State University.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #4

C.



Courtesy of American Berkshire Association.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #4

D.



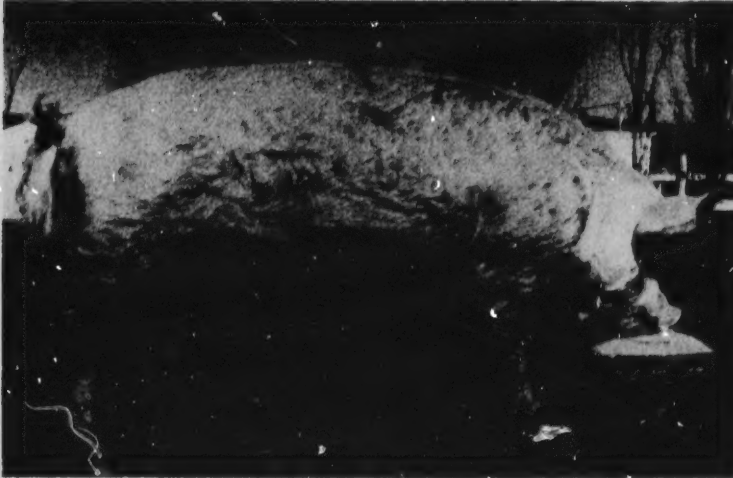
Courtesy of Oklahoma State University.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #4

E.



Courtesy of American Yorkshire Club.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #4

F.



Courtesy of Oklahoma State University.

Desirable Traits

Undesirable Traits

SWINE BREEDS AND SELECTION UNIT III

ASSIGNMENT SHEET #5 — USE CORRECT SWINE-JUDGING TERMS FOR DESIRABLE AND UNDESIRABLE TRAITS

NAME _____

SCORE _____

One of the most important things that you can learn as a vocational agriculture student is how to give a set of oral reasons for your placings. Giving reasons provides you with an opportunity to organize your thoughts, to present your ideas and your opinions, and to justify your placings. Many people judge livestock, but very few have the capability of giving a good set of oral reasons for their placings. To be capable of giving a good set of reasons for your placings, you must use correct swine-judging terms to justify your placings.

Listed below are swine-judging terms. For each term describing a desirable trait, write the opposite term describing an undesirable trait; for each term describing an undesirable trait, write the opposite term describing a desirable trait.

- | | |
|--|-------|
| A. Larger-framed | _____ |
| B. Shorter-rumped | _____ |
| C. Low-fronted | _____ |
| D. Light-boned, fine-featured | _____ |
| E. Longer-sided | _____ |
| F. Heavier-muscled | _____ |
| G. Freer-moving | _____ |
| H. Deeper-bodied | _____ |
| I. Wasty down top and loin edge | _____ |
| J. Leaner | _____ |
| K. Stouter-headed | _____ |
| L. More width between the blades (scapulas) | _____ |
| M. Light-boned | _____ |
| N. More natural width and structure down the top, between the legs | _____ |
| O. Longer-muscled | _____ |

ASSIGNMENT SHEET #5

- P. Trimmer
- Q. Longer-necked
- R. Broodier
- S. More functionally correct underline

SWINE BREEDS AND SELECTION UNIT III

ASSIGNMENT SHEET #6 — USE FFA PLACING CARDS

NAME _____

SCORE _____

As a student of vocational agriculture, and as an FFA member, you will have opportunities to participate in livestock judging contests. The contests may be held on a local, state, or national level. Judging contests provide you with an opportunity to apply the skills you have learned.

All livestock judging contests use the placing card. You must learn to use the card correctly. The card identifies you as a contestant, and it relates to the officials just how you placed the class.

Before turning in your placing card, make sure that the card is filled out correctly and completely. There should be only one mark on the card indicating your placings of the class. Always use a pencil to fill out the card, and always fill out all parts of the card.

EXAMPLE:

FFA PLACING CARD Contestant's Initial <u>BP</u> No. <u>80-A</u> Class <u>Market barrows</u>		1-2-3-4	
		1-2-4-3	
		1-3-2-4	
		1-3-4-2	
		1-4-2-3	X
		1-4-3-2	
		2-1-3-4	
		2-1-4-3	
		2-3-1-4	
		2-3-4-1	
		2-4-1-3	
		2-4-3-1	
		3-1-2-4	
		3-1-4-2	
		3-2-1-4	
		3-2-4-1	
		3-4-1-2	
		3-4-2-1	
		4-1-2-3	
		4-1-3-2	
		4-2-1-3	
		4-2-3-1	
		4-3-1-2	
		4-3-2-1	
Placing Grade _____ Reason Grade _____			

ASSIGNMENT SHEET #6

Using the information given, fill out the following FFA placing cards.

- A. Use your correct initials. You are contestant number 100-A, and you are judging a class of market barrows. You placed the class 3-1-4-2.

FFA PLACING CARD		Contestant's Initial	No.	
		Class		
Placing Grade				
Reason Grade				
1-2-3-4				
1-2-4-3				
1-3-2-4				
1-3-4-2				
1-4-2-3				
1-4-3-2				
2-1-3-4				
2-1-4-3				
2-3-1-4				
2-3-4-1				
2-4-1-3				
2-4-3-1				
3-1-2-4				
3-1-4-2				
3-2-1-4				
3-2-4-1				
3-4-1-2				
3-4-2-1				
4-1-2-3				
4-1-3-2				
4-2-1-3				
4-2-3-1				
4-3-1-2				
4-3-2-1				

ASSIGNMENT SHEET #6

- B. Use your correct initials. You are contestant number 64-D, and you are judging a class of Duroc gilts. You placed the class 4-2-1-3.

FFA PLACING CARD	Contestant's Initial _____ No. _____ Class _____	1-2-3-4	
		1-2-4-3	
		1-3-2-4	
		1-2-4-2	
		1-4-2-3	
		1-4-3-2	
		2-1-3-4	
		2-1-4-3	
		2-3-1-4	
		2-3-4-1	
		2-4-1-3	
		2-4-3-1	
		3-1-2-4	
		3-1-4-2	
		3-2-1-4	
		3-2-4-1	
		3-4-1-2	
		3-4-2-1	
		4-1-2-3	
		4-1-3-2	
4-2-1-3			
4-2-3-1			
4-3-1-2			
4-3-2-1			
Placing Grade _____			
Reason Grade _____			

ASSIGNMENT SHEET #6

- C. Use your correct initials. You are contestant number 83-B, and you are judging a class of Yorkshire boars. You placed the class 2-3-4-1.

FFA PLACING CARD		Contestant's Initial _____	No. _____	Class _____	1-2-3-4	
					1-2-4-3	
Placing Grade _____					1-3-2-4	
					1-3-4-2	
Reason Grade _____					1-4-2-3	
					1-4-3-2	
					2-1-3-4	
					2-1-4-3	
					2-3-1-4	
					2-3-4-1	
					2-4-1-3	
					2-4-3-1	
					3-1-2-4	
					3-1-4-2	
					3-2-1-4	
					3-2-4-1	
					3-4-1-2	
					3-4-2-1	
					4-1-2-3	
					4-1-3-2	
					4-2-1-3	
					4-2-3-1	
					4-3-1-2	
					4-3-2-1	

SWINE BREEDS AND SELECTION
UNIT III

ASSIGNMENT SHEET #7 — COMPUTE PLACING SCORES

NAME _____ SCORE _____

There is a total of fifty possible points in a livestock class. Fifty points represents a perfect score. There are twenty-four possible placings on any given class. Before you judge a class, a group of selected officials will have already evaluated the class, determined the official placings, and identified the different cuts that each class should receive. The cuts are used to compute your score. The purpose of this assignment is to give you practice in computing your scores.

Use Information Sheet, Section XI to assist you in working the following problems.

- A. Class 1, Yorkshire gilts. Official placings are 3 - 2 - 1 - 4 with cuts of 4, 2, 2. You placed the class 2 - 3 - 4 - 1; what would be your correct score?

Your score = _____

- B. Class 2, Duroc boars. Official placings are 1 - 4 - 3 - 2 with cuts of 4, 4, 2. You placed the class 3 - 4 - 1 - 2; what would be your correct score?

Your score = _____

ASSIGNMENT SHEET #7

- C. Class 3, Berkshire gilts. Official placings are 3 - 1 - 4 - 2 with cuts of 5, 2, 2. You placed the class 3 - 4 - 2 - 1; what would be your correct score?

Your score = _____

- D. Class 4, market barrows. Official placings are 1 - 2 - 3 - 4 with cuts of 2, 4, 5. You placed the class 2 - 1 - 4 - 3; what would be your correct score?

Your score = _____

SWINE BREEDS AND SELECTION
UNIT III

ASSIGNMENT SHEET #8 — EVALUATE A SET OF WRITTEN REASONS
FOR PLACING A CLASS OF SWINE

NAME _____ SCORE _____

Reasons for placing a class of swine must be clear and must contain standard terminology. This assignment will help you become familiar with standard terms of comparison.

PART I

On the following page are written reasons for placing a class of Duroc gilts. Read the reasons, circle the desirable terms, and underline the undesirable terms. This activity will help you see how terms for desirable and undesirable traits are used and how these terms are tied together.

ASSIGNMENT SHEET #8

DUROC GILT REASONS

I preferred an alignment of 4-1-2-3 on this class of Duroc gilts, preferring 4, the heaviest-structured, widest-made gilt first. However, if I could change 4, I would like to see her more mobile off her front end.

Nonetheless, in my initial pair, 4 as compared to 1 was a wider-made gilt that exhibited more width between her blades and had more width and muscling to both rump and ham. In addition, 4 was a heavier-boned gilt with more circumference of forearm and scapula. Moreover, 4 was a longer-bodied gilt with a more uniformly spaced underline.

I will readily agree that 1, the sandy-colored gilt, was a more mobile, longer-strided gilt that was leaner-designed; however, I faulted 1 and placed her second as she was a shallow-bodied, tight-ribbed gilt that needed more thickness from end to end.

In my intermediate pair, I liked 1 over 2 due to 1's advantage in exterior design as she was a leveler-made, looser-appearing gilt that had more curvature and flex to her front end as well as more give and flex to her hock and pastern. One was also a wider-topped gilt that had more natural thickness to her loin and rump. Because of 1's advantage of looseness and mobility, she should be more adaptable to a wider variety of gestation regimes.

I will admit that 2 was a deeper-bodied gilt that had more depth to both fore and rear flank, as well as having more curvature of rib; however, I faulted 2 and preferred her third as she was a high-topped, steep-fronted gilt that lacked mobility off each end.

But now in my concluding pair I placed 2 over 3 as 2 was a much heavier-structured, stouter-made gilt that stood on more diameter of bone with more circumference to foot and forearm. Also 2 was a larger-framed, rawer-designed gilt that exhibited more natural width from end to end. Two also had a distinct advantage in volume as she was a deeper-bodied, looser-flanked gilt with a more convex rib shape.

I will definitely concede that 3 had the highest quality, most evenly spaced underline in the class; however, more importantly, 3 was the narrowest-made, lightest-muscled, finest-featured gilt in the class that would be the least adaptable to confinement situations.

Written by: Jarold Callahan
Instructor, Animal Science
Oklahoma State University

ASSIGNMENT SHEET #3

PART II

Use this part of the assignment sheet to evaluate the placing reasons for clarity, correct style, and correctness.

A. Are the reasons written in a clear, concise manner? ☐ Yes ☐ No

B. Did the reasons convince you that the class was placed correctly? ☐ Yes ☐ No

Justify your answer. _____

C. Did the writer use standard terms for desirable and undesirable traits? ☐ Yes ☐ No

D. Did you find any terms for desirable or undesirable traits that lacked meaning or purpose? ☐ Yes ☐ No

If so, name those terms.

E. Would you make changes in any of the placing reasons? ☐ Yes ☐ No

Write your changes.

F. Could the placing reasons be given in less than two minutes? ☐ Yes ☐ No

G. Would the reason-taker be able to identify the animals from the judge's reasons? ☐ Yes ☐ No

Why or why not?

SWINE BREEDS AND SELECTION
UNIT III

ASSIGNMENT SHEET #9 — JUDGE CLASSES OF MARKET SWINE

NAME _____ SCORE _____

This assignment sheet will give you practice judging two classes of market swine.

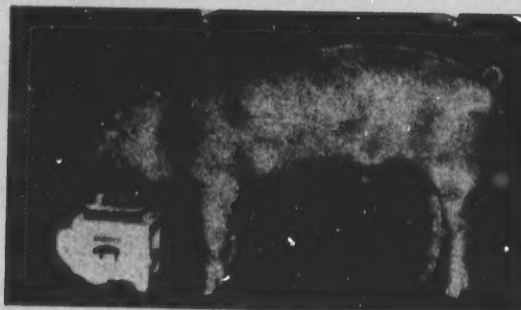
There are two parts to this assignment sheet. In Part I you are responsible for judging the pictured class of market swine. Study the class, write your placings in the blank, and take notes on the class. Write your notes in the blanks. You will use these notes to write a set of reasons for the class when you do Assignment Sheet #11. Be prepared to present your reasons orally.

In Part II of this assignment sheet, you are required to judge a class that has been set up by the instructor.

ASSIGNMENT SHEET #9

PART I

1



2



3



4

Courtesy of United Duroc Swine Registry.

ASSIGNMENT SHEET #9

Class Name _____ Placings _____

1. _____

2. _____

3. _____

4. _____

PART II

Judge a class set up by your instructor. Write your placings and take notes on the class. You will use these notes to write a set of reasons for Assignment Sheet #11. Be prepared to give the reasons orally.

Class Name _____ Placings _____

1. _____

2. _____

ASSIGNMENT SHEET #9

3. _____

4. _____

SWINE BREEDS AND SELECTION
UNIT III

ASSIGNMENT SHEET #10 — JUDGE A CLASS OF BREEDING SWINE

NAME _____ SCORE _____

Judge the class of breeding swine that has been set up for you. The instructor or a junior or senior student has already placed the officials on the class. Write your placings, and take notes on the class. You will use the notes in Assignment Sheet #11.

Class Name _____ Placings _____

Take notes on the class.

1. _____

2. _____

3. _____

4. _____

ASSIGNMENT SHEET #11

B. Class from Assignment Sheet #9, Part II

Class Name _____ Placings _____

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

ASSIGNMENT SHEET #11

C. Class from Assignment Sheet #10

Class Name _____ Placings _____

9

SWINE BREEDS AND SELECTION
UNIT III

ASSIGNMENT SHEET #12 — GIVE A SET OF ORAL REASONS
FOR PLACING A CLASS OF SWINE

NAME _____

SCORE _____

Giving reasons orally takes a lot of practice. Your reasons should describe to the reason-taker just how you placed the class. In order to obtain a good score, you must convince the reason-taker that your placings are correct.

Study the reasons you wrote in Assignment Sheet #11, and be prepared to give the reasons orally to your instructor or to a junior or senior vocational agriculture student. Read over your reasons several times. Do not attempt to memorize the reasons; just remember the good points of each animal and the grants. You should also have a good opening statement. Stand in front of a mirror and practice your reasons several times.

To help you prepare your oral reasons for your swine placings, answer the following questions.

- A. Do you have a good opening statement? Yes_____ No_____
- B. Do your reasons sound good? Yes_____ No_____
- C. Do your reasons grant one animal over the other? Yes_____ No_____
- D. Do your terms tie into phrases? Yes_____ No_____
- E. Can the reasons be given in less than two minutes? Yes_____ No_____

Review Information Sheet, Sections XIV and XV, and then give oral reasons for your swine placings to your instructor or to a junior or senior vocational agriculture student.

SWINE BREEDS AND SELECTION
UNIT IIIASSIGNMENT SHEET #13 — USE RESOURCE MATERIALS TO LOCATE INFORMATION
ABOUT SWINE BREEDS

NAME _____ SCORE _____

It is somewhat difficult to state specifically the main reason why certain individuals select one breed over another. The different breed associations and the members within those associations work hard to improve the quality of their breeds. Many breed associations conduct research on feed conversion and carcass evaluation. They publish this information for their members, but this information can also attract individuals who desire to enter swine production but have not selected a specific breed they would like to raise. The bottom line for most breed selection is this: *personal preference*.

The purpose of this assignment is to give you the opportunity to select a swine breed and to research some of the historical happenings, the breed characteristics, and the studies that have been done by the breed associations. The following information should be of assistance to you while conducting your research.

- *National Hog Farmer* magazine
- Information received from the different breed associations
- Breed magazines and journals
- Textbooks:

Modern Breeds of Livestock by Hilton M. Briggs and Dinus M. Briggs, Macmillan Publishing Co., Inc., New York, 1980.

Swine Production by Clarence E. Bundy, Ronald V. Diggins, and Virgil W. Christensen, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1976.

Answer the following questions about the breed you have chosen for your research.

Breed _____

- A. Where did the breed originate? _____
- B. What is the breed's color pattern? _____
- C. What are the body and head characteristics? _____
- D. What are considered to be some strong points of the breed? _____

ASSIGNMENT SHEET #13

- E. What are considered to be some weak points of the breed? _____

- F. When was the breed association for this breed formed? _____
- G. What is the name and address of the breed association? _____

- H. How many animals have been recorded in the breed association? _____

- I. Who is presently serving as the breed secretary? _____
- J. What is the name of the field person who serves your state? _____

- K. Does the breed association sponsor a test? _____ If yes, where is the station located?

- L. Does the breed association publish a newsletter, journal, or magazine? _____
What is the name of the newsletter, journal, or magazine? _____

- M. How does the breed rate as a market hog? _____
- N. Does the breed hang up a good, usable carcass? _____
Carcass length _____ Loin eye _____ square inches
- O. What type of disposition does the breed have? _____

- P. What is the average litter size? _____
- Q. Are the sows considered to be good milkers? _____
- R. Are the boars active breeders? _____
- S. How does the breed cross in a crossbreeding program? _____

ASSIGNMENT SHEET #13

- T. What does the information say about growth rate? _____

- U. What is your opinion of the breed? _____

- V. If you were to go into the swine business, would you purchase this breed? _____
Justify your answer. _____

SWINE BREEDS AND SELECTION
UNIT III

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

- A. Duroc
- B. Yorkshire
- C. Chester White
- D. Berkshire
- E. Landrace
- F. Hampshire
- G. Poland China
- H. Spots

Assignment Sheet #2

- | | | |
|---------------|---------------|-------------|
| A. Jowl | I. Dewclaw | Q. Back |
| B. Pastern | J. Hind leg | R. Shoulder |
| C. Knee | K. Hock | S. Neck |
| D. Foreflank | L. Stifle | T. Ear |
| E. Belly | M. Ham | U. Snout |
| F. Sheath | N. Tail | V. Nostril |
| G. Side | O. Rump (hip) | |
| H. Hind flank | P. Loin | |

Assignment Sheet #3

- | | |
|-------------------------------|-----------------------|
| A. Trimmed jowl, 2% | F. Loin, 19% |
| B. Boston butt, 9% | G. Spareribs, 3% |
| C. Picnic, 10% | H. Bacon (belly), 16% |
| D. Forefoot, 2% | I. Ham, 22% |
| E. Clear plate, back fat, 15% | J. Hind foot, 2% |

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #4

- | | |
|---|---|
| <p>A. Desirable Traits
 Long rump
 Deep flank
 Appears to be very lean
 Long neck</p> | <p>Undesirable Traits
 Straight legs on front and rear, runs downhill in front
 Shallow jaw
 Steep rump
 Light bone
 Straight pasterns
 Small feet</p> |
| <p>B. Desirable Traits
 Long neck
 Big head
 Deep jaw
 Deep rib cage
 Long rump
 Lean
 Wide forearm</p> | <p>Undesirable Traits
 High top, "rainbow top"
 Tight flank
 Straight hind legs
 Steep rump</p> |
| <p>C. Desirable Traits
 Good set to front and rear legs
 Good set to pasterns
 Level top
 Level rump
 Long neck
 Loose flank
 Deep rib</p> | <p>Undesirable Traits
 Light bone
 Small feet
 Small, shallow head
 Crest over neck</p> |
| <p>D. Desirable Traits
 Large forearms
 Deep rib cage
 Wide forearms
 Good set to rear legs</p> | <p>Undesirable Traits
 Steep rump
 Short neck
 Straight front legs
 Shallow rib cage
 Shallow jaw</p> |
| <p>E. Desirable Traits
 Deep-bodied
 Deep flank
 Good set to rear pasterns
 Level rump
 Level top
 Deep, full rib cage</p> | <p>Undesirable Traits
 Short neck
 Straight front legs
 Steep rump
 Crest over neck</p> |
| <p>F. Desirable Traits
 Long head
 Deep-bodied
 Long rump
 Appears to be lean
 Deep jaw</p> | <p>Undesirable Traits
 High top, "rainbow top"
 Steep rump
 Straight front legs
 Big sheath</p> |

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #5

- A. Smaller-framed
- B. Longer-rumped
- C. Taller-fronted
- D. Heavier-structured
- E. Shorter-bodied or -sided
- F. Lighter-muscled
- G. Unsound; restricted in movement
- H. Shallow-bodied, high-flanked
- I. Freer of grease down loin edge
- J. Fatter, overfinished, wasty, carried excess condition
- K. Narrow-headed, fine-featured
- L. Narrow-topped
- M. Heavier-boned
- N. Narrow-made, narrow-topped
- O. Short, tight muscle structure
- P. Fatter, overfinished, wasty, carried excess condition
- Q. Shorter-necked
- R. Unsound, poor underline
- S. Inverted, pin, blind teats; low-quality, poor spacing

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #6

A.

FFA PLACING CARD		Contestant's Initial	No. <u>100-A</u>	
		Class <u>Market barrows</u>		
Placing Grade _____	Reason Grade _____	1-2-3-4		
		1-2-4-3		
		1-3-2-4		
		1-3-4-2		
		1-4-2-3		
		1-4-3-2		
		2-1-3-4		
		2-1-4-3		
		2-3-1-4		
		2-3-4-1		
		2-4-1-3		
		2-4-3-1		
		3-1-2-4		
		3-1-4-2		
		3-2-1-4		
		3-2-4-1		
		3-4-1-2		
		3-4-2-1		
		4-1-2-3		
		4-1-3-2		
		4-2-1-3		
		4-2-3-1		
		4-3-1-2		
		4-3-2-1		

B.

FFA PLACING CARD		Contestant's Initial	No. <u>64-D</u>	
		Class <u>Duroc gilts</u>		
Placing Grade _____	Reason Grade _____	1-2-3-4		
		1-2-4-3		
		1-3-2-4		
		1-3-4-2		
		1-4-2-3		
		1-4-3-2		
		2-1-3-4		
		2-1-4-3		
		2-3-1-4		
		2-3-4-1		
		2-4-1-3		
		2-4-3-1		
		3-1-2-4		
		3-1-4-2		
		3-2-1-4		
		3-2-4-1		
		3-4-1-2		
		3-4-2-1		
		4-1-2-3		
		4-1-3-2		
		4-2-1-3		
		4-2-3-1		
		4-3-1-2		
		4-3-2-1		

ANSWERS TO ASSIGNMENT SHEETS

C.

FFA PLACING CARD		Contestant's Initial	No. <u>83-B</u>	Class <u>Yorkshire boars</u>	1-2-3-4	
					1-2-4-3	
					1-3-2-4	
					1-3-4-2	
					1-4-2-3	
					1-4-3-2	
					2-1-3-4	
					2-1-4-3	
					2-3-1-4	
					2-3-4-1	X
					2-4-1-3	
					2-4-3-1	
					3-1-2-4	
					3-1-4-2	
					3-2-1-4	
					3-2-4-1	
					3-4-1-2	
					3-4-2-1	
					4-1-2-3	
					4-1-3-2	
					4-2-1-3	
					4-2-3-1	
					4-3-1-2	
					4-3-2-1	
Placing Grade _____						
Reason Grade _____						

Assignment Sheet #7

- A. 44
 B. 34
 C. 44
 D. 43

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #8 — Evaluated to the satisfaction of the instructor

(NOTE: The following criteria are suggestions for evaluating student responses.)

PART I

DUROC GILT REASONS

I preferred an alignment of 4-1-2-3 on this class of Duroc gilts, preferring 4, the heaviest-structured, widest-made gilt first. However, if I could change 4, I would like to see her more mobile off her front end.

Nonetheless, in my initial pair, 4 as compared to 1 was a wider-made gilt that exhibited more width between her blades and had more width and muscling to both rump and ham. In addition, 4 was a heavier-boned gilt with more circumference of forearm and scapula. Moreover, 4 was a longer-bodied gilt with a more uniformly spaced underline.

I will readily agree that 1, the sandy colored gilt, was a more mobile, longer-strided gilt that was leaner designed; however, I faulted 1 and placed her second as she was a shallow-bodied, tight-ribbed gilt that needed more thickness from end to end.

In my intermediate pair, I liked 1 over 2 due to 1's advantage in exterior design as she was a leveler-made, looser-appearing gilt that had more curvature and flex to her front end as well as more give and flex to her hock and pastern. One was also a wider-topped gilt that had more natural thickness to her loin and rump. Because of 1's advantage of looseness and mobility, she should be more adaptable to a wider variety of gestation regimes.

I will admit that 2 was a deeper-bodied gilt that had more depth to both fore and rear flank, as well as having more curvature of rib; however, I faulted 2 and preferred her third as she was a high-topped, steep-fronted gilt that lacked mobility off each end.

But now in my concluding pair I placed 2 over 3 as 2 was a much heavier-structured, stouter-made gilt that stood on more diameter of bone with more circumference to foot and forearm. Also 2 was a larger-framed,rawer-designed gilt that exhibited more natural width from end to end. Two also had a distinct advantage in volume as she was a deeper-bodied, looser-flanked gilt with a more convex rib shape.

I will definitely concede that 3 had the highest quality, most evenly spaced underline in the class; however, more importantly, 3 was the narrowest-made, lightest-muscled, finest-featured gilt in the class that would be the least adaptable to confinement situations.

Written by: Jarold Callahan
Instructor, Animal Science
Oklahoma State University

ANSWERS TO ASSIGNMENT SHEETS

PART II

- A. Were the student's responses correct?
- B. Did the student find any terms for desirable or undesirable traits that lacked meaning or purpose?
- C. Did the student suggest that changes should be made in the reasons?
- D. Could the reasons be given in less than two minutes?

Assignment Sheet #9 — Evaluated to the satisfaction of the instructor

(NOTE: Placings for Part I are 2-4-3-1, with cuts of 2, 4, 6. The following criteria are suggestions for evaluating student responses.)

- A. Did the student place the classes correctly?
- B. What were the student's scores on the placings?

Assignment Sheet #10 — Evaluated to the satisfaction of the instructor

(NOTE: The following criteria are suggestions for evaluating student responses.)

- A. Did the student place the class correctly?
- B. What was the student's score on the placings?

Assignment Sheet #11 — Evaluated to the satisfaction of the instructor

(NOTE: The following criteria are suggestions for evaluating student responses.)

- A. Did the student use correct terms for desirable and undesirable traits in writing the reasons?
- B. Did the student tie the phrases together?
- C. Were the reasons convincing? Did the reasons separate the pairs?
- D. Could the reasons be given in less than two minutes?

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #12 — Evaluated to the satisfaction of the instructor

(NOTE: The following criteria are suggestions for evaluating student responses.)

- A. Did the student speak with an appropriate voice?
- B. Were the reasons convincing?
- C. Were the reasons presented in less than two minutes?
- D. Did the student look the reason-taker in the eye?

Assignment Sheet #13 — Evaluated to the satisfaction of the instructor

(NOTE: The following criteria are suggestions for evaluating student responses.)

- A. Were the questions answered correctly?
- B. Did the student use a variety of information to answer the questions?

SWINE BREEDS AND SELECTION UNIT III

TEST

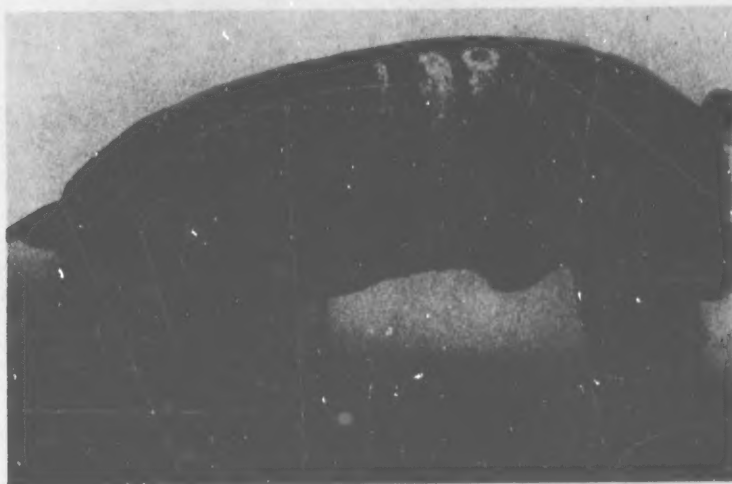
NAME _____

SCORE _____

1. Match to their correct definitions terms associated with swine breeds and selection. Write the correct numbers in the blanks.

- | | | |
|---------|--|------------------------|
| _____a. | Mature female swine that have produced a litter of pigs | 1. Gilts |
| _____b. | Person who breeds animals for commercial markets; usually produces crossbreeds | 2. Barrows |
| _____c. | Male swine that have been castrated | 3. Sows |
| _____d. | Person who breeds animals whose ancestors are all of the same breed; animals may or may not be pedigreed | 4. Boars |
| _____e. | Uncastrated male swine | 5. Commercial producer |
| _____f. | Swine raised for slaughter at a weight of 240 pounds | 6. Market hogs |
| _____g. | Young female swine that have not reproduced | 7. Purebred producer |

2. Identify the following major breeds of swine. Write the correct names in the blanks.

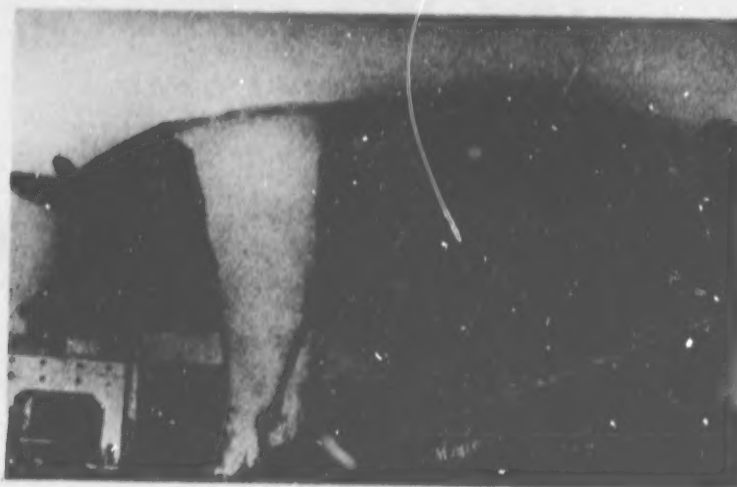


a. _____

TEST



b.

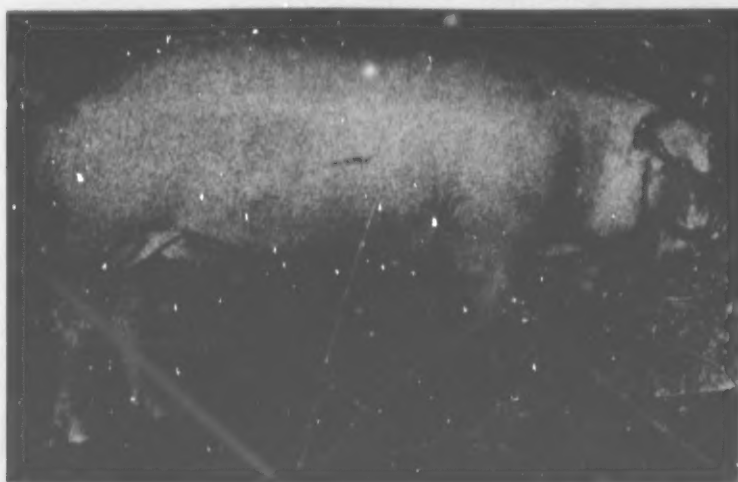


c.

TEST



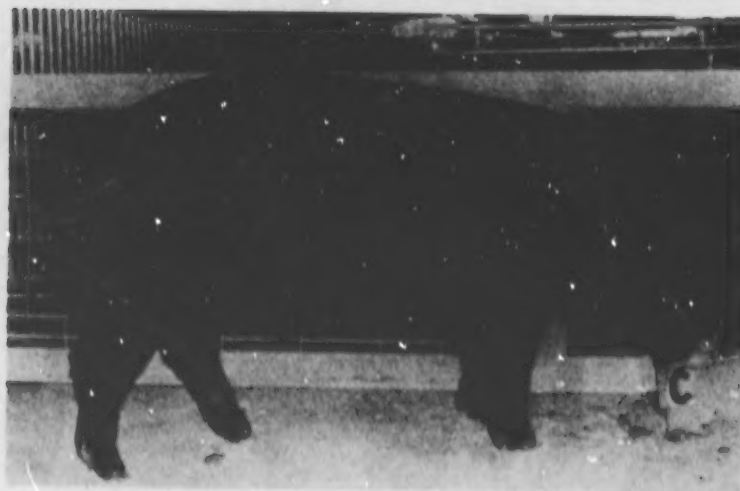
d.



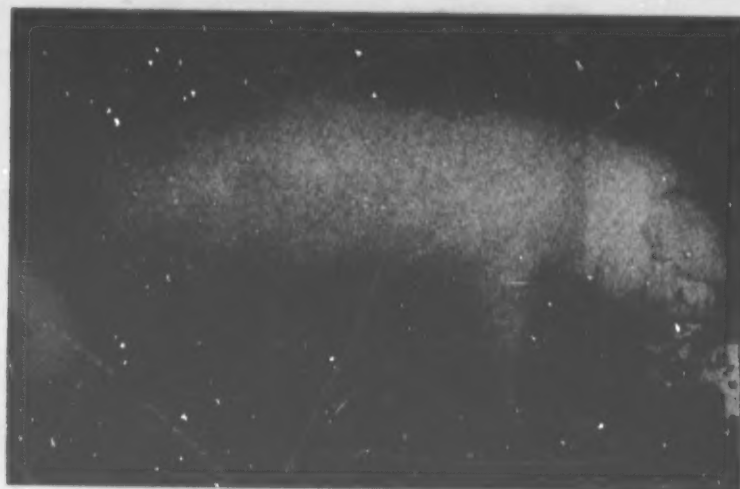
e.

340-D

TEST



f.



g.

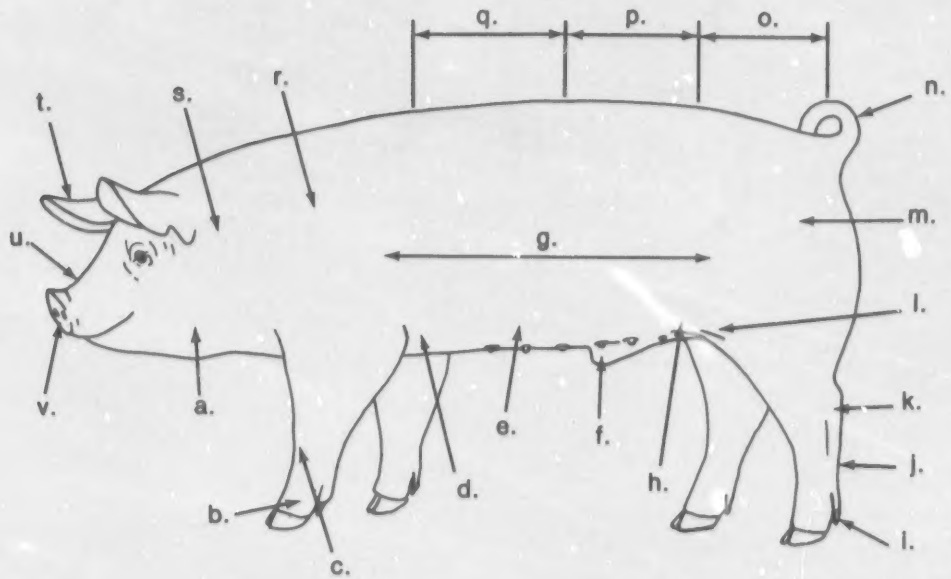
TEST



h.

TEST

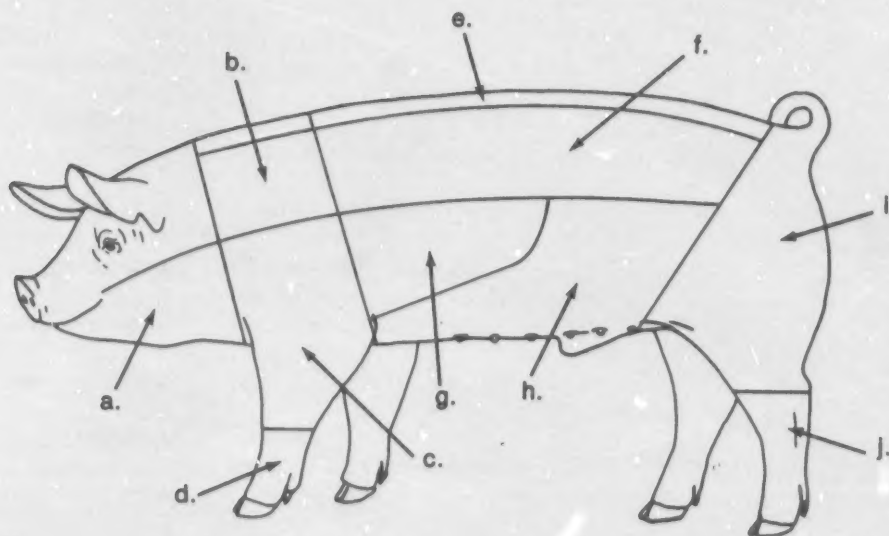
3. Label the parts of the hog illustrated below. Write the correct names in the corresponding blanks.



a.	_____	l.	_____
b.	_____	m.	_____
c.	_____	n.	_____
d.	_____	o.	_____
e.	_____	p.	_____
f.	_____	q.	_____
g.	_____	r.	_____
h.	_____	s.	_____
i.	_____	t.	_____
j.	_____	u.	_____
k.	_____	v.	_____

TEST

4. Label wholesale cuts of pork with their proper names and desired percentages of total carcass yield. Write the names and percentages in the corresponding blanks.



a.	_____	_____ %	f.	_____	_____ %
b.	_____	_____ %	g.	_____	_____ %
c.	_____	_____ %	h.	_____	_____ %
d.	_____	_____ %	i.	_____	_____ %
e.	_____	_____ %	j.	_____	_____ %

TEST

5. Define *livestock judging*.

6. Match to their correct definitions terms associated with livestock judging. Write the correct numbers in the blanks.

- | | | |
|---------|--|--------------------------|
| _____a. | Quality of being correct on the feet and legs as opposed to being unsound | 1. Ruggedness |
| _____b. | Traits distinguishing a male from a female | 2. Meatiness or muscling |
| _____c. | Quality of having large bones and frame | 3. Quality |
| _____d. | General term commonly defined as a combination of characteristics that make an animal most useful for a specific purpose | 4. Trimness |
| _____e. | Condition of having appropriate size and weight for age | 5. Soundness |
| _____f. | Size of animal as determined by skeletal structure | 6. Growthiness |
| _____g. | Traits that distinguish one breed from another | 7. Grant |
| _____h. | Traits distinguishing a female from a male | 8. Type |
| _____i. | Freedom from excess finish or fat | 9. Broodiness |
| _____j. | High proportion of volume in the areas of high-priced cuts | 10. Breed character |
| _____k. | Overall smoothness, blending of shoulders, and substance of head and bone | 11. Femininity |
| _____l. | Combination of characteristics indicating that the female will be a good mother | 12. Masculinity |
| _____m. | Recognition that an animal has desirable traits but that these traits are not acceptable to be used any higher in class | 13. Scale |

TEST

7. List the two major traits of a market hog.

- a. _____
b. _____

8. List characteristics of the ideal market hog.

- a. _____
b. _____
c. _____
d. _____
e. _____
f. _____

9. Distinguish between selected swine-judging terms for desirable and undesirable traits. Write an "X" in the blank before terms for desirable traits.

- ____ a. Tight-structured
____ b. Taller-fronted
____ c. Larger volume
____ d. Sounder-footed
____ e. Smaller-scaled
____ f. Wider-topped
____ g. Shallow-bodied, high-flanked
____ h. Leaner
____ i. Light-boned
____ j. Longer-necked
____ k. Blunt or coarse, low-quality underline
____ l. Unsound, poor underline

TEST

10. State the purpose of the FFA placing card.

11. Compute placing scores for the following problems. Show your work.

- a. You judged a class of market hogs; the official placings were 4-2-1-3 with cuts of 4, 2, 2. You placed the class 4-1-3-2. What is your score?

Your score = _____

- b. You judged a class of Duroc gilts; the official placings were 3-2-4-1 with cuts of 2, 2, 2. You placed the class 2-3-1-4. What is your score?

Your score = _____

12. State the purpose of giving reasons for placings.

13. Arrange in order the steps to follow in taking notes for oral reasons for placings. Write a "1" before the first step, a "2" before the second step, and so on.

_____ a. Write your placing at the top of the page

_____ b. Take notes on each animal to identify strong points and criticisms of each

TEST

- ____c. Identify the class
 - ____d. Write the numbers 1 through 4 down the side of the page, leaving approximately three lines between the numbers
 - ____e. Take notes by pairs, giving advantages as well as grants
14. Select from the following list techniques for giving oral reasons for placings. Write an "X" in the blank before each correct answer.
- ____a. Speak with a clear, powerful voice
 - ____b. Use five terms in succession
 - ____c. Carry notes into reason room
 - ____d. Open reasons with a precise opening statement
 - ____e. Speak for more than two minutes while giving reasons
 - ____f. Stand approximately 4 to 8 feet away from reason-taker
 - ____g. Avoid body movement
 - ____h. Look reason-taker squarely in the eye
 - ____i. Talk in a firm voice
 - ____j. Conclude reasons with "For these reasons, I placed this class . . ."
 - ____k. Present reason-taker with accurate picture of animal
 - ____l. Stand erect, with feet and shoulders aligned
 - ____m. Use identification characteristics whenever possible to let reason-taker know that you saw the class
 - ____n. Use good voice control, both in speed and volume
15. Arrange in order steps to follow in presenting oral reasons for placings. Write a "1" before the first step, a "2" before the second step, and so on.
- ____a. Discuss top pair
 - ____b. Present opening remarks
 - ____c. Discuss middle pair
 - ____d. Discuss bottom pair

TEST

(NOTE: Test questions 16-21 list the assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

16. Evaluate a set of written reasons for placing a class of swine.
17. Judge classes of market swine.
18. Judge a class of breeding swine.
19. Write sets of reasons for placing classes of swine.
20. Give a set of oral reasons for placing a class of swine.
21. Use resource materials to locate information about swine breeds.

SWINE BREEDS AND SELECTION
UNIT III

ANSWERS TO TEST

- | | | | | |
|----|----|---|----|---|
| 1. | a. | 3 | e. | 4 |
| | b. | 5 | f. | 6 |
| | c. | 2 | g. | 1 |
| | d. | 7 | | |
-
- | | | | | |
|----|----|---------------|--|--|
| 2. | a. | Berkshire | | |
| | b. | Yorkshire | | |
| | c. | Hampshire | | |
| | d. | Spots | | |
| | e. | Chester White | | |
| | f. | Duroc | | |
| | g. | Landrace | | |
| | h. | Poland China | | |
-
- | | | | | | | |
|----|----|------------|----|------------|----|----------|
| 3. | a. | Jowl | i. | Dewclaw | q. | Back |
| | b. | Pastern | j. | Hind leg | r. | Shoulder |
| | c. | Knee | k. | Hock | s. | Neck |
| | d. | Foreflank | l. | Stifle | t. | Ear |
| | e. | Belly | m. | Ham | u. | Snout |
| | f. | Sheath | n. | Tail | v. | Nostril |
| | g. | Side | o. | Rump (hip) | | |
| | h. | Hind flank | p. | Loin | | |

ANSWERS TO TEST

4. a. Trimmed jowl 2%
b. Boston butt 9%
c. Picnic 10%
d. Forefoot 2%
e. Clear plate, back fat 15%
f. Loin 19%
g. Spareribs 3%
h. Bacon (belly) 16%
i. Ham 22%
j. Hind foot 2%
5. Definition should include the following — Process of carefully analyzing an animal's individual traits and comparing those traits to an ideal animal or standard
6. a. 5 h. 11
b. 12 i. 4
c. 1 j. 2
d. 8 k. 3
e. 6 l. 9
f. 13 m. 7
g. 10
7. a. Production — 50 percent emphasis
b. Carcass — 50 percent emphasis

ANSWERS TO TEST

8.
 - a. Raised in litter of ten pigs
 - b. Reached market weight in 150 days
 - c. Has market weight of 240 pounds
 - d. Has 32-inch-long carcass
 - e. Has 0.70 inch of back fat at tenth rib
 - f. Has 5.8 square inches of loin eye
9. b, c, d, f, h, j
10. Identifying the judge and recording the placing
11.
 - a. 44
 - b. 45
12. Presenting your opinion and justification for placing a class of livestock
13.
 - a. 2
 - b. 4
 - c. 1
 - d. 3
 - e. 5
14. a, d, f, g, h, i, k, l, m, n
15.
 - a. 2
 - b. 1
 - c. 3
 - d. 4

ANSWERS TO TEST

16. Evaluated to the satisfaction of the instructor
17. Evaluated to the satisfaction of the instructor
18. Evaluated to the satisfaction of the instructor
19. Evaluated to the satisfaction of the instructor
20. Evaluated to the satisfaction of the instructor
21. Evaluated to the satisfaction of the instructor

SHEEP BREEDS AND SELECTION UNIT IV

UNIT OBJECTIVE

After completing this unit, the student should be able to identify sheep breeds and to select breeds according to type and characteristics. The student should be able to judge sheep and give a set of oral reasons for placings. The student will show this knowledge by completing the assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with sheep breeds and selection.
2. Identify major breeds of sheep.
3. Label the parts of a sheep.
4. Select from a list the characteristics of the ideal market lamb.
5. List desirable characteristics of breeding sheep.
6. Label wholesale cuts of lamb with their proper names and desired percentages of total carcass yield.
7. Define *livestock judging*.
8. Match to their correct definitions terms associated with livestock judging.
9. Select from a list major factors to consider in judging breeding sheep.
10. Select from a list major factors to consider in judging market lambs.
11. Arrange in order the procedures to follow in handling sheep for judging.
12. List the areas of a lamb that have fat covering.
13. State procedures for catching sheep.
14. State procedures for holding sheep.
15. Distinguish between selected sheep-judging terms for desirable and undesirable traits.
16. State the purpose of the FFA placing card.

OBJECTIVE SHEET

17. Compute placing scores.
18. State the purpose of giving reasons for placings.
19. Arrange in order steps to follow in taking notes for oral reasons for placings.
20. Select from a list techniques for presenting oral reasons for placings.
21. Arrange in order steps to follow in presenting oral reasons for placings.
22. Evaluate characteristics of a ewe.
23. Evaluate characteristics of a ram.
24. Evaluate market lambs.
25. Use FFA placing cards.
26. Evaluate a set of written reasons for placing a class of sheep.
27. Judge a class of market lambs.
28. Judge a class of breeding sheep.
29. Write a set of reasons for placing a class of sheep.
30. Give a set of oral reasons for placing a class of sheep.
31. Use resource materials to locate information about sheep breeds.

SHEEP BREEDS AND SELECTION
UNIT IV

SUGGESTED ACTIVITIES

- I. Unit contents
 - A. Objective sheet
 - B. Suggested activities
 - C. Transparency masters
 - 1. TM #1 — Parts of a Sheep
 - 2. TM #2 — Ideal Market Lamb
 - 3. TM #3 — Wholesale Cuts of Lamb and Percentages of Total Carcass Yield
 - 4. TM #4 — Wholesale and Retail Cuts of Lamb
 - 5. TM #5 — Desirable and Undesirable Lambs
 - D. Information sheet
 - E. Assignment sheets
 - 1. Assignment Sheet #1 — Identify Major Breeds of Sheep
 - 2. Assignment Sheet #2 — Label the Parts of a Sheep
 - 3. Assignment Sheet #3 — Evaluate Characteristics of a Ewe
 - 4. Assignment Sheet #4 — Evaluate Characteristics of a Ram
 - 5. Assignment Sheet #5 — Label Wholesale Cuts of Lamb with Their Proper Names and Desired Percentages of Total Carcass Yield
 - 6. Assignment Sheet #6 — Use Correct Sheep-Judging Terms for Desirable and Undesirable Traits
 - 7. Assignment Sheet #7 — Use FFA Placing Cards
 - 8. Assignment Sheet #8 — Compute Placing Scores
 - 9. Assignment Sheet #9 — Evaluate a Set of Written Reasons for Placing a Class of Sheep
 - 10. Assignment Sheet #10 — Evaluate Market Lambs
 - 11. Assignment Sheet #11 — Judge a Class of Market Lambs

SUGGESTED ACTIVITIES

12. Assignment Sheet #12 — Judge a Class of Breeding Sheep
13. Assignment Sheet #13 — Write a Set of Reasons for Placing a Class of Sheep
14. Assignment Sheet #14 — Give a Set of Oral Reasons for Placing a Class of Sheep
15. Assignment Sheet #15 — Use Resource Materials to Locate Information About Sheep Breeds

F. Answers to assignment sheets

G. Test

H. Answers to test

II. Instructor's guide

A. Obtain materials to supplement unit.

1. Books

- a. *Judging Livestock, Dairy Cattle, Poultry, and Crops.* Available from Prentice-Hall, Inc., Englewood Cliffs, New Jersey 07632.
- b. *Modern Breeds of Livestock.* Available from Macmillan Publishing Company, Inc., 866 Third Avenue, New York, New York 10022.
- c. *OSU Livestock Judging Manual.* Available from the OSU Bookstore, Student Union, Oklahoma State University, Stillwater, Oklahoma 74078.

(NOTE: Provide one copy for each pair of students while training judging teams.)

2. Breed promotional material

(NOTE: Each of the breed associations offers free training materials. These materials can be ordered from the following addresses.)

- a. American Cotswold Record Association, 282 Meaderboro Road, Rochester, New Hampshire 03867, (419) 652-3642.
- b. American Delaine-Merino Association, 1193 Township Road 346, Nova, Ohio 44859, (419) 652-3642.
- c. American Hampshire Sheep Association, P.O. Box 345, Ashland, Missouri 65010, (314) 657-9012; breed publication: *Hampshire World*.

SUGGESTED ACTIVITIES

- d. American North Country Cheviot Sheep Association, 717 Fall Creek Road, Longview, Washington 98632, (206) 577-8015.
 - e. American Polyply Sheep Association, P.O. Box 371, Rexburg, Idaho 83440, (208) 356-8220.
 - f. American Rambouillet Breeders' Association, 2709 Sherwood Way, San Angelo, Texas 76901, (915) 949-4414.
 - g. American Romney Breeders' Association, 4375 N.E. Weslinn Drive, Corvallis, Oregon 97331, (503) 753-7603.
 - h. American Southdown Breeders' Association, Route 4, Box 14B, Bellefonte, Pennsylvania 16823, (814) 355-9841.
 - i. American Suffolk Sheep Society, 1115 North Main, Logan, Utah 84321, (801) 753-2983; breed publication: *The Modern Suffolk*.
 - j. Columbia Sheep Breeders' Association, P.O. Box 272, Upper Sandusky, Ohio 43351, (614) 482-2608; breed publication: *Speaking of Columbias*.
 - k. Continental Dorset Club, P.O. Box 506, Hudson, Iowa 50643, (319) 988-4122.
 - l. Finnsheep Breeders' Association, P.O. Box 34303, Indianapolis, Indiana 46234, (317) 291-4654.
 - m. Montadale Sheep Breeders' Association, P.O. Box 44300, Indianapolis, Indiana 45244, (317) 839-6198.
 - n. National Lincoln Sheep Breeders' Association, R.R. 6, Box 24, Decatur, Illinois 62521, (217) 864-3601.
 - o. National Suffolk Sheep Association, P.O. Box 324, Columbia, Missouri 65205, (314) 442-4103.
 - p. National Tunis Sheep Registry, Route 1, Wayland, New York 14572, (716) 669-2664.
 - q. Natural Colored Wool Growers Association, Route 1, Box 2382, Davis, California 95616, (916) 753-7217.
 - r. United States Targhee Sheep Association, Box 40, Absarokee, Montana 59001, (406) 328-8335.
3. Slides
- a. *Livestock Breeds*, 42 slides.

SUGGESTED ACTIVITIES

- b. *Judging Ewe Lambs*, 13 slides.
- c. *Judging Livestock*, 1983 FFA and 4-H Contests, Houston Livestock Show and Rodeo, 21 slides, two classes.

(NOTE: The three sets of slides above are available for purchase from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)

- 4. FFA Placing Cards. Order from Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh, Stillwater, Oklahoma, 74074.
- 5. Lamb Meat Chart. Order from the National Livestock and Meat Board, 44 North Michigan Avenue, Chicago, Illinois 60611.
- 6. Stenography notepads. Purchase one of these 6-by-9-inch books for each class member. Use the books in teaching students to take notes for giving reasons for their placings.

B. Make or obtain transparencies.

(NOTE: Transparencies are available for purchase from the Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)

C. Introduce unit by helping students focus on the importance of the sheep industry in Oklahoma.

SUGGESTIONS:

- Tell students that in 1982, sheep production in Oklahoma contributed 3 million dollars to our economy. Tell students that sheep inventories have been increasing for the past seven years; are up 8 percent from the previous year.
- Ask students to estimate an individual's lamb consumption during a year. In 1982, consumption was 1.6 pounds per year per person throughout the United States. Oklahomans consumed 0.3 pounds per person.
- Ask students to identify commercial and purebred sheep producers in the community.
- Introduce students to Assignment Sheet #15. This assignment sheet is related to using reference materials to study different breeds of sheep. Review questions with students, and help students locate reference materials. Establish a date that the assignment sheet should be completed.

SUGGESTED ACTIVITIES

- D. Provide students with objective sheet.
- E. Discuss unit and specific objectives.
- F. Provide students with information and assignment sheets.
- G. Discuss information and assignment sheets.

(NOTE: This unit contains fifteen assignment sheets. It is recommended that the assignment sheets be used in the order that they appear in the unit.)

1. Make the terms in Section I of the Information Sheet meaningful by illustrating the meaning of each term as it is presented.

SUGGESTIONS:

- Use photographs received from the different breed associations to discuss terms such as *buck*, *ewe*, *wether*, and *lamb*.
 - Request that a sheep breeder come to the class to talk about his or her operation. Follow up the talk with a field trip to the farm.
2. Use Information Sheet, Section II to help students learn to identify major breeds of sheep. Have students complete Assignment Sheet #1.

SUGGESTIONS:

- Show slides, *Livestock Breeds*, and discuss breed characteristics. Stress color markings and body characteristics.
 - Develop a bulletin board, using pictures of the different breeds.
 - Have the students paste each breed's picture on separate sheets of paper and then identify the breeds. This assignment will be used later in the unit.
3. Use Section III of the Information Sheet and Transparency #1 to help students learn to identify the parts of a sheep. Have students complete Assignment Sheet #2.

SUGGESTIONS:

- Stress the importance of calling a sheep's body parts by their correct names. Tell students they will have to use the names of body parts when giving reasons for their placings.

SUGGESTED ACTIVITIES

- Use Transparency #1 to point out the three major separations of the top of an animal: the rump, loin, and back or rack.
 - Bring a sheep into the shop area and use the sheep to help the students learn to identify the parts. While a student is holding the animal, use a pointer to indicate parts that students are to practice identifying.
4. Use Information Sheet, Sections IV and V, Transparency #2, and Assignment Sheets #3 and #4 to form the foundation for students to learn desirable characteristics of market lambs and breeding sheep.

SUGGESTIONS:

- Review selections from *Livestock Breeds* slides to point out desirable characteristics of sheep and how these characteristics are similar among sheep breeds.
 - After students complete Assignment Sheets #3 and #4, bring live sheep into the shop or arrange a field trip to allow students to identify characteristics using live sheep.
5. Use Section VI of the Information Sheet and Transparencies #3 and #4 to help students label the wholesale cuts of lamb and percentages of total carcass yield. Have students complete Assignment Sheet #5.

SUGGESTIONS:

- Use meat chart from National Livestock and Meat Board to help students distinguish between retail and wholesale cuts of lamb.
- Have students collect retail prices of lamb and then bring the information to class. Use the information to stress the importance of producing a lamb that hangs up a high-yielding carcass.
- Use the chalkboard to help students calculate carcass yield. For instance, if the live weight of a slaughter lamb is 115 pounds and the dressing is 45 to 55 percent, what is the approximate carcass weight? (52 to 63 pounds) And, if the average retail price of lamb is \$1.35, what is the value of the carcass? (\$70 to \$85). Point out how the hindsaddle area (loin and leg) is approximately 45 percent of the weight but actually accounts for 65 percent of the lamb's value.

SUGGESTED ACTIVITIES

6. Combine Information Sheet, Sections VII and VIII and Transparency #5 to help students understand the meaning of livestock judging and become familiar with livestock judging terms.

SUGGESTIONS:

- Have the students review the breed pictures they collected and apply the judging terms to the pictures.
- Introduce the class to judging by showing the *Judging Ewe Lambs* slides. While viewing the slides with the students, use the judging terms to help students start learning to apply the terms.
- Ask a vocational agriculture student from the senior class to talk to students about sheep judging.

7. Combine Information Sheet, Sections IX and X to help students learn the correct factors to consider in judging sheep.

SUGGESTIONS:

- Use pictures from breed associations and from magazines to help students learn the meaning of such factors as *type*, *quality*, and *general appearance*.
- Tell the students that in breeding classes each breed has a standard of excellence. Show a picture of the ideal type Suffolk. Use the points of the standard of excellence to help students learn to identify strong and weak points of individual animals.

8. Combine Information Sheet, Sections XI through XIV to help students learn to catch, hold, and examine sheep; and identify areas of fat covering.

SUGGESTIONS:

- Show students how to position their hands and fingers for examining an animal: fingers must be extended and joined, not spread apart. Tell students not to jab at the animal, but to use the pads of their fingers to feel the animal.
- Bring four or five sheep into the shop area and let each student practice catching and holding a sheep.
- Have all students practice examining the ribs, back, and loin area for indication of condition and covering.

SUGGESTED ACTIVITIES

9. Use Information Sheet, Section XV to help students learn to use correct judging terms for desirable and undesirable traits. Have students complete Assignment Sheet #6.

SUGGESTIONS:

- Review sheep breeding terms by dividing the class into two teams. Have Team A use terms for desirable traits and Team B use terms for undesirable traits. Team A goes first, calling out a term for a desirable trait; Team B has to offer the acceptable term for the undesirable trait. If Team B answers correctly, then Team B gives a term for an undesirable trait to Team A. Continue this activity until you think that the class has learned to use the terms correctly.
 - Illustrate how the terms are used when evaluating an individual animal and making comparisons.
 - Show students how to tie terms into phrases; for example, "Number 1 should yield a higher-cutability carcass, with a larger percentage of retail cuts."
10. Combine Information Sheet, Sections XVI and XVII to help students learn the purpose of the FFA Placing Card and how to compute placing scores. Have students complete Assignment Sheets #7 and #8.

SUGGESTIONS:

- Give students an FFA Placing Card. Have them examine the card while you explain its purpose and how to fill it out correctly.
 - Put an example on the chalkboard and have the students place the example on the card. Have students mark a placing of 2 - 4 - 3 - 1. Use an official placing of 4 - 3 - 1 - 2, with cuts of 4, 2, 2. Use chalkboard to compute students' scores.
11. Combine Information Sheet, Sections XVIII and XIX to teach purposes of giving reasons for placings and how to take notes for oral reasons.

SUGGESTIONS:

- Stress the importance of giving reasons for placings and how giving such reasons helps the students with public speaking.
- Distribute stenography notebooks to class. Put an example of a set of notes on the chalkboard and have students copy the notes on a page of the notebook. Show students how to use abbreviations when taking notes.

SUGGESTED ACTIVITIES

- Use *Judging Ewe Lambs* slides to set up a class for students to judge. Have students take notes on the class and write a set of reasons for their placings. Evaluate reasons, make suggestions for improvement, and have students rewrite the reasons as needed.
12. Combine Sections XX and XXI of Information Sheet to help students present oral reasons for placings. Have students complete Assignment Sheet #9.

SUGGESTIONS:

- Record the reasons for placings on Assignment Sheet #9, and play back to the class. This activity will give the students an example of how reasons should be given orally and how terms for desirable and undesirable traits are used.
 - Ask a junior or senior vocational agriculture student to give a set of oral reasons for placings to the class. Have the class listen to and evaluate the reasons using points contained in Information Sheet, Section XX.
13. Combine Assignment Sheets #10 through #14, and have students practice their judging skills.

SUGGESTIONS:

- Have the juniors or seniors put together one breeding class and one class of market lambs for students to judge.
 - Inform students that they must take notes and write a set of reasons for their placings on the class, using Assignment Sheet #14.
 - Use junior or senior members as reason-takers, and let the students give a set of oral reasons.
14. Collect and discuss Assignment Sheet #15.

SUGGESTIONS:

- Have students give oral reports on their research findings.
- Have students discuss the results of their research in a class question/answer session.

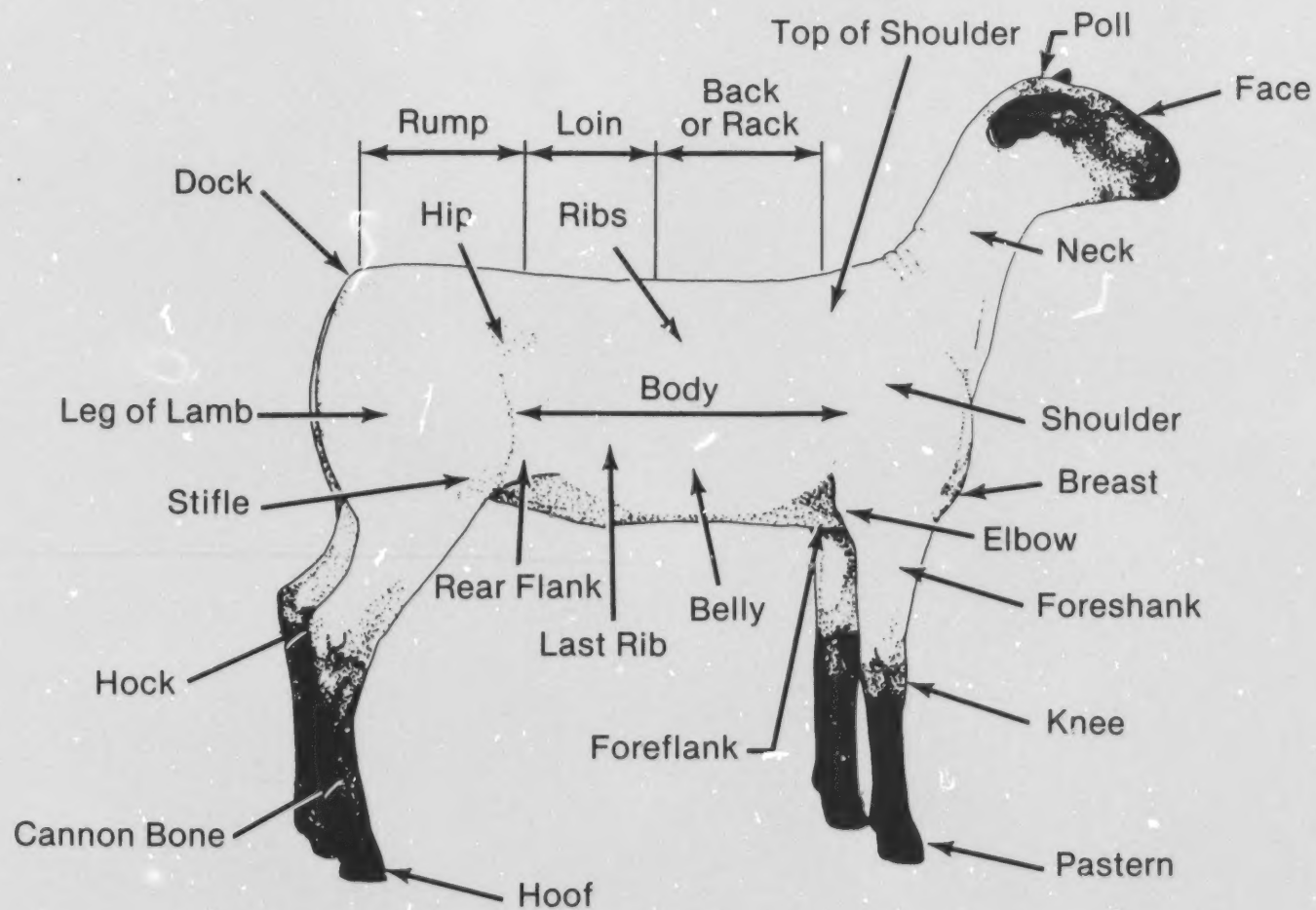
H. Give test

SUGGESTED ACTIVITIES

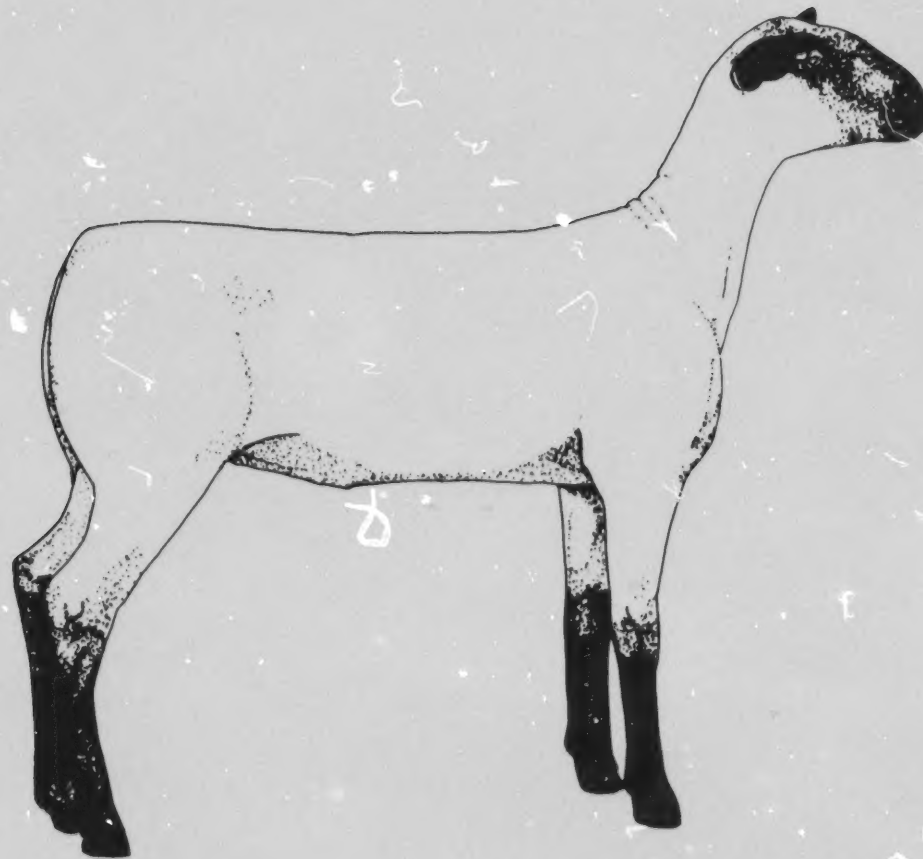
III. Unit references

- A. Briggs, Hilton M., and Dinus M. Briggs. *Modern Breeds of Livestock*. New York: Macmillan Publishing Co., Inc., 1980.
- B. Callahan, Jarold. *OSU Livestock Judging Manual*. Stillwater, Oklahoma: Oklahoma State University, 1982.
- C. Ensminger, M. E. *Sheep and Wool Science*. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1970.

Parts of a Sheep



Ideal Market Lamb



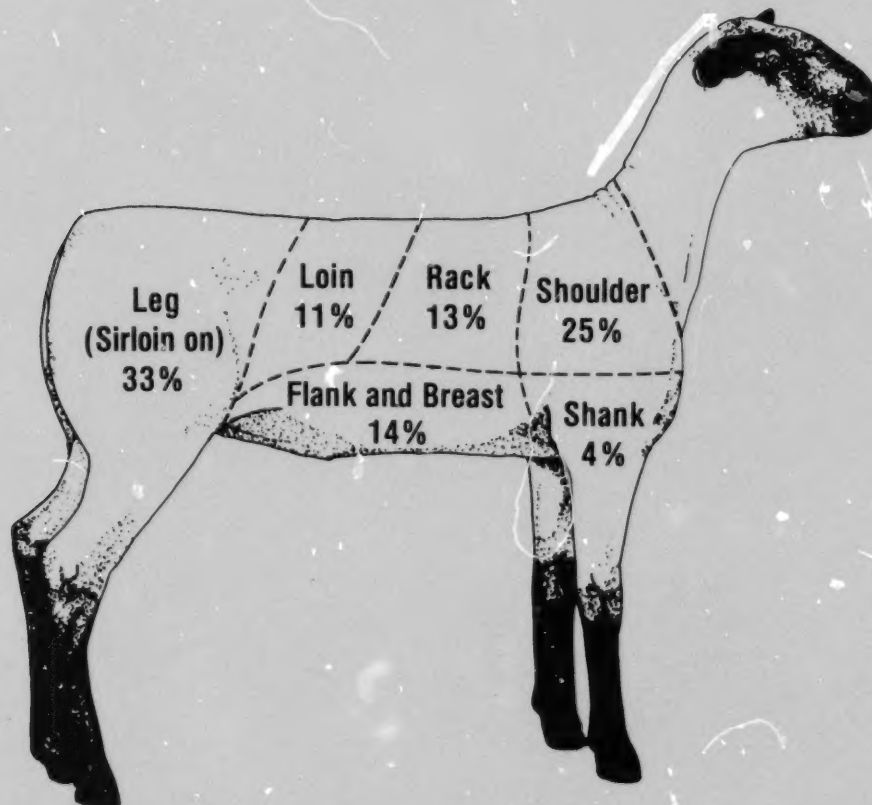
TM #2

683

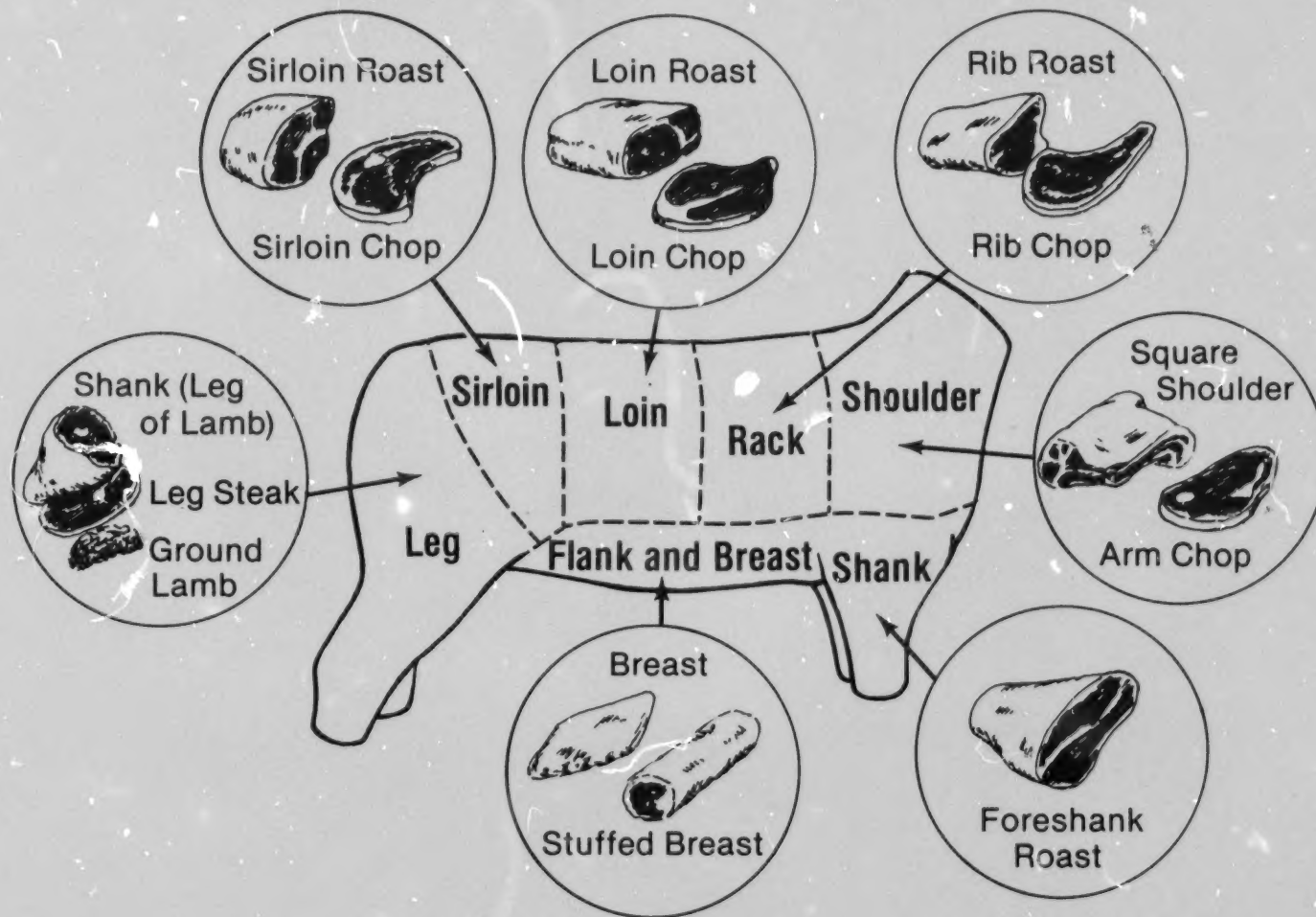
684

VO AG 1 - 367-D

Wholesale Cuts of Lamb and Percentages of Total Carcass Yield



Wholesale and Retail Cuts of Lamb



Desirable and Undesirable Lambs



Desirable



Undesirable

SHEEP BREEDS AND SELECTION
UNIT IV

INFORMATION SHEET

I. Terms and definitions

- A. Ram — Mature male sheep

(NOTE: *Buck* also refers to a ram.)

- B. Ewe — Female sheep

- C. Wether — Castrated male sheep

- D. Lamb — Male or female sheep under one year old

- E. Purebred — Animal whose ancestors are all of the same breed; may or may not be pedigreed

- F. Meat breeds — Breeds developed primarily for meat production, with little emphasis on wool production

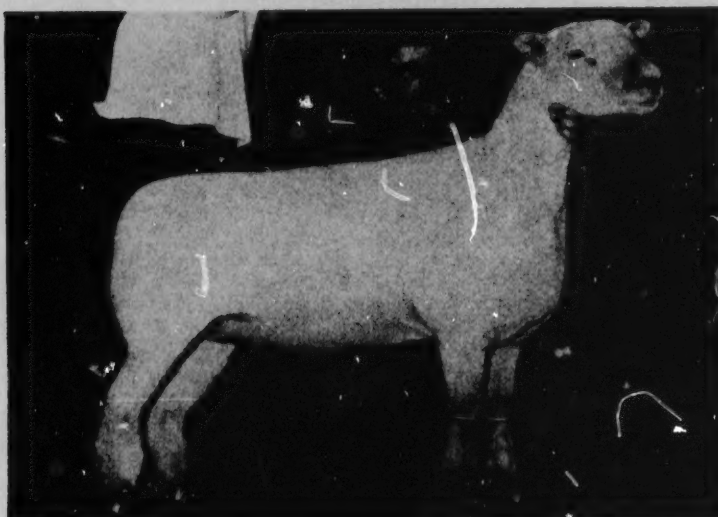
- G. Wool breeds — Breeds developed for wool production

II. Breeds of sheep (Figures 1-6)

(NOTE: These breeds are used for wool and meat, but mostly for meat.)

- A. Southdown

FIGURE 1



Courtesy of Sheep Breeder, Columbia, Missouri.

INFORMATION SHEET

B. Hampshire

FIGURE 2



Courtesy of Sheep Breeder, Columbia, Missouri.

C. Suffolk

FIGURE 3



Courtesy of Sheep Breeder, Columbia, Missouri.

INFORMATION SHEET

D. Shropshire

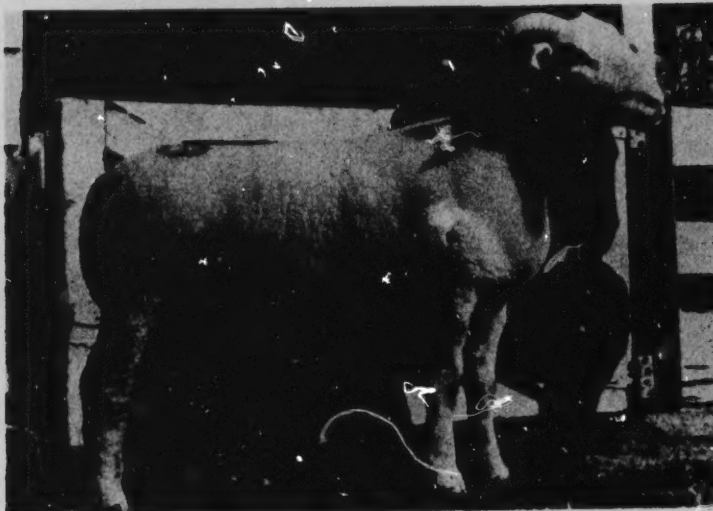
FIGURE 4



Courtesy of *Sheep Breeder*, Columbia, Missouri.

E. Dorset

FIGURE 5

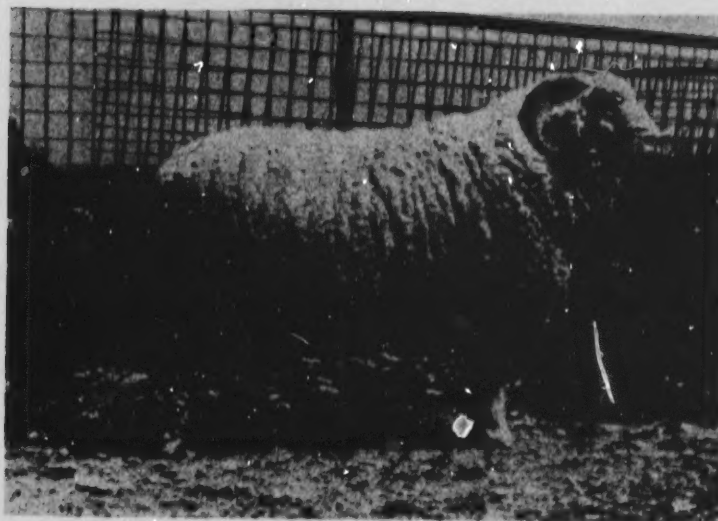


Courtesy of *Sheep Breeder*, Columbia, Missouri.

INFORMATION SHEET

F. Rambouillet

FIGURE 6

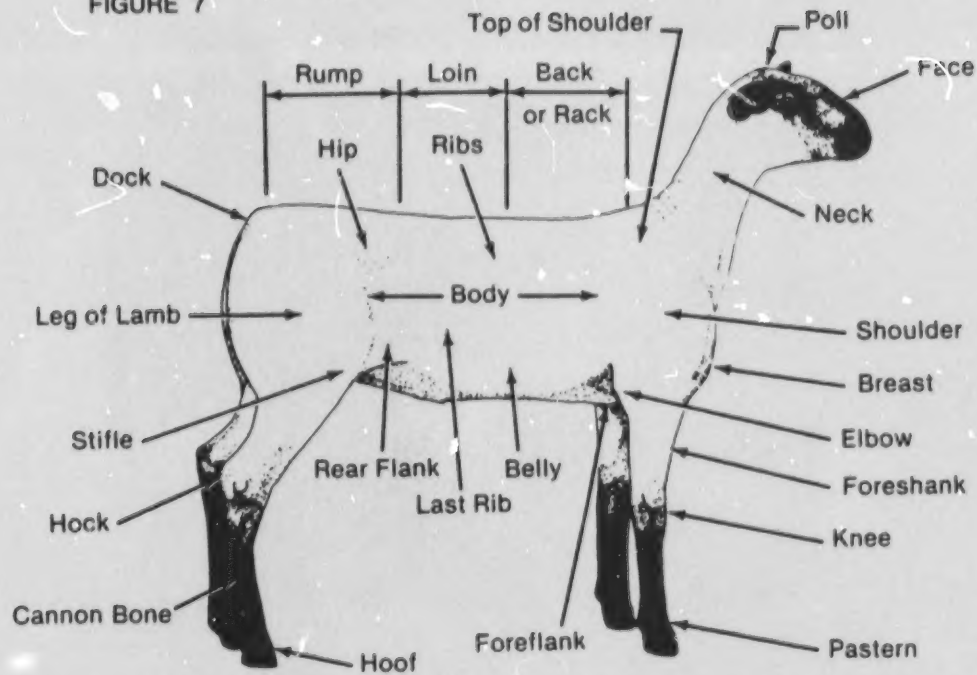


Courtesy of the Animal Science Department, Oklahoma State University, Stillwater, Oklahoma.

INFORMATION SHEET

III. Parts of a sheep (Figure 7)

FIGURE 7

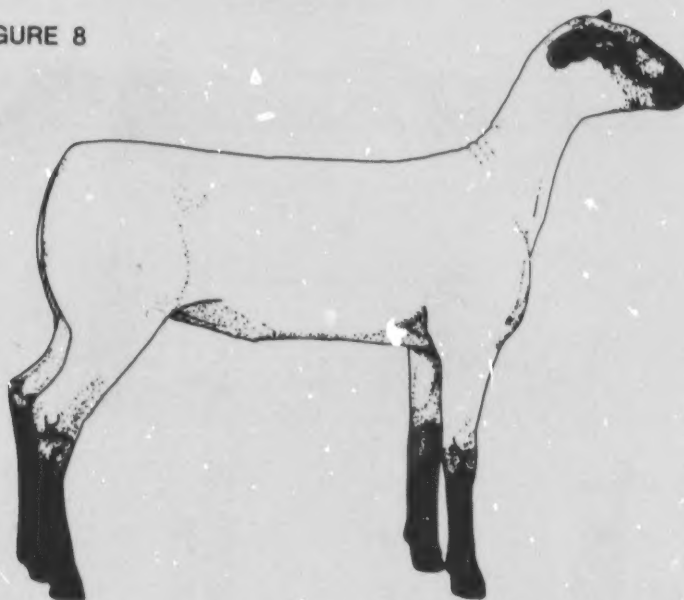


INFORMATION SHEET

IV. Characteristics of the ideal market lamb (Figure 8)

EXAMPLE:

FIGURE 8



- A. Moderately long and tall
- B. Well muscled
- C. Correct finish of 0.1 to 0.2 inch over rib eye
- D. Straight over top
- E. Long in loin and rump

(NOTE: Over 50 percent of the length should be posterior to the thirteenth rib.)

- F. Clean and trim in neck and shoulder with tight skin
- G. Correct set of feet and legs

INFORMATION SHEET

V. Desirable characteristics of breeding sheep (Figures 9 and 10)

EXAMPLES:

FIGURE 9



FIGURE 10



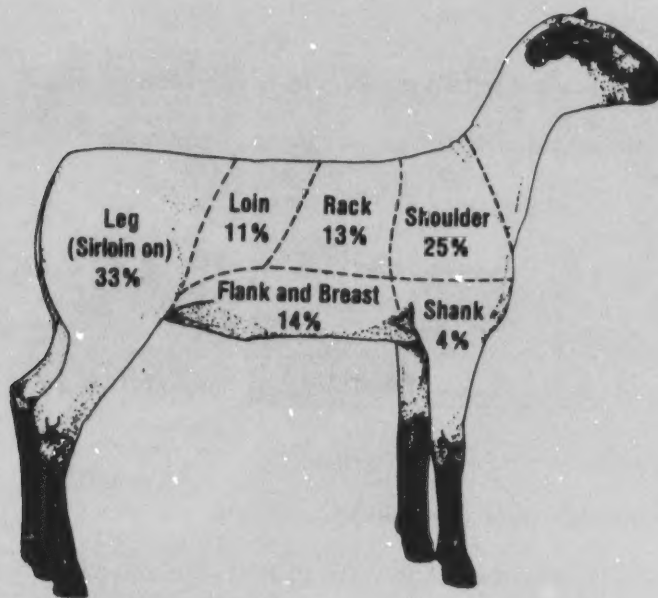
Figures 9 and 10 courtesy of *Sheep Breeder*, Columbia, Missouri.

- A. Moderately long and tall
- B. Thick in muscling
- C. Straight over top
- D. Good on feet and legs
- E. Typical head of breed and sex
- F. Fleece relatively free of black or dark wool

INFORMATION SHEET

VI. Wholesale cuts of lamb and percentages of total carcass yield (Figure 11)

FIGURE 11



VII. Livestock judging — Analyzing carefully an animal's individual traits and comparing those traits to an ideal animal or standard

(NOTE: In a livestock judging contest, there are four animals in a class. Each of the four animals is analyzed individually and compared with other animals in the class.)

VIII. Terms associated with livestock judging

- A. Type — General term commonly defined as a combination of characteristics that make an animal useful for a specific purpose

(NOTE: Type is determined by the general form or shape of an animal.)

- B. Meatiness — High proportion of muscle volume in areas of high-priced cuts
- C. Quality — Overall smoothness, blending of shoulders, and refinement of head and bone
- D. Trim — Free of excess finish or fat

INFORMATION SHEET

- E. **Tight-framed** — Ability of an animal to "hold itself together" as indicated by strength of top, tightness of shoulders, and squareness of feet and leg placement
- F. **Sound** — Correct on feet and legs
(NOTE: This term is used primarily with breeding stock.)
- G. **Growthiness** — Condition of having appropriate size and weight for age
- H. **Scale** — Size of an animal as determined by skeletal structure
(NOTE: Scale should be independent of weight.)
- I. **Rugged** — Having large bones and frame
- J. **Breed character** — Traits that distinguish one breed from another
- K. **Femininity** — Traits distinguishing a female from a male
- L. **Masculinity** — Traits distinguishing a male from a female
- M. **Grant** — Recognition that an animal has desirable traits, but that these traits are not acceptable to be used any higher in class
- N. **Balance** — Blending of the parts
- O. **Eye appeal** — Overall appearance of style, balance, and type in relation to an ideal
- P. **General appearance** — Impression relative to an ideal, gained from looking at sheep from a distance of 25 to 30 feet
- IX. **Factors to consider in judging breeding sheep**
 - A. **General appearance**
 - B. **Type**
 - C. **Quality**
 - D. **Natural muscling**
 - E. **Fleece**
 - F. **Size and weight as related to age**

INFORMATION SHEET

X. Factors to consider in judging market lambs

A. Type

B. Finish

EXAMPLE: Uniform, between 0.1 and 0.2 inches

(NOTE: The finish is measured over the loin between the last two ribs.)

C. Muscle

D. Dressing percent

XI. Procedures to follow in handling sheep for judging (Figures 12-17)

A. Check covering and strength of top from rump to top of shoulder

EXAMPLE:

FIGURE 12



INFORMATION SHEET

B. Check shoulder width and covering

EXAMPLE:

FIGURE 13



C. Check width and length of loin

EXAMPLE:

FIGURE 14



INFORMATION SHEET

D. Check thickness of leg

EXAMPLE:

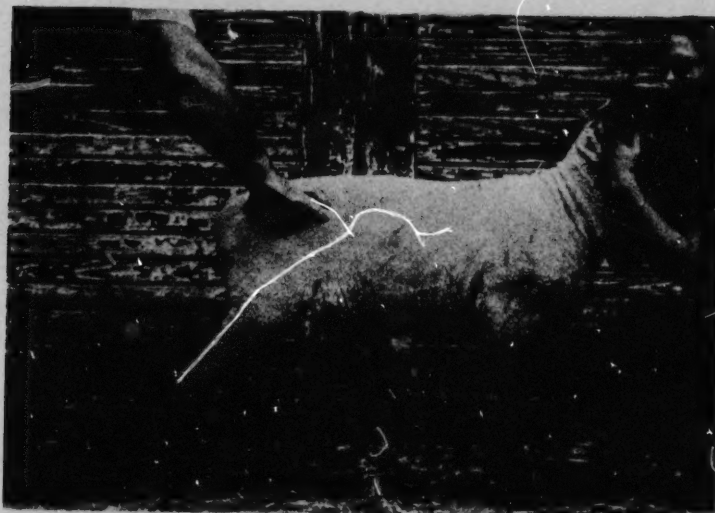
FIGURE 15



E. Check width and length of rump

EXAMPLE:

FIGURE 16



INFORMATION SHEET

F. Check depth of twist

EXAMPLE:

FIGURE 17



INFORMATION SHEET

XII. Areas of a lamb that have fat covering

- A. Ribs
- B. Back
- C. Loin

XIII. Procedures for catching sheep

- A. Confine animal in small area
- B. Move quietly toward animal
- C. Swiftly grasp rear flank with your hand (Figure 18)

EXAMPLE:

FIGURE 18



INFORMATION SHEET

XIV. Procedures for holding sheep (Figure 19)

EXAMPLE:

FIGURE 19



A. Grasp fold of flesh under lower jaw firmly with left hand

B. Place right hand securely over dock

(NOTE: The right hand in this position can be useful in moving the animal. As the animal quiets down, the right hand may be removed.)

XV. Sheep-judging terms for desirable and undesirable traits (Tables 1 and 2)

TABLE 1

MARKET SHEEP		
AREA	DESIRABLE	UNDESIRABLE
Size	A large, growthy lamb	A short, conventional lamb
	A tall, upstanding wether	A short, low-set wether
	An extremely long-patterned lamb	A short-coupled lamb
	A lamb with tremendous length of hindsaddle	A short-hindsaddled lamb
	The largest-framed, longest-bodied lamb in the class	The shortest-bodied, earliest-maturing lamb in the class

INFORMATION SHEET

AREA	DESIRABLE	UNDESIRABLE
Muscling	A longer-rumped lamb with more total dimension to the leg The thickest, heaviest-muscled lamb in the class A lamb that exhibits more total volume of leg The longest-hindsaddled lamb, being especially longer in the loin The widest-topped lamb with the most thickness over the loin edge The thickest, squarest-rumped lamb	An extremely short-rumped lamb that is flat in the leg A narrow light-muscled lamb A lamb that is light-muscled through the leg A short-hindsaddled lamb that is especially short-loined A narrow-topped, shallow-loined lamb A lamb that narrows out at the rump
Finish	A firmer-finished lamb A more uniformly covered lamb that is more optimum in degree of finish A cleaner-designed, trimmer lamb A lamb that is trimmer up front and cleaner through the lower one-third A more optimally finished lamb	A soft, spongy lamb An unevenly covered lamb that carries too much finish A fat, overfinished lamb A heavy-fronted lamb that exhibits too much lower one-third A thin, underfinished lamb
Balance and Design	A nicer-balanced lamb A lamb that is straighter in lines and more correct on feet and legs A stronger-topped lamb A very attractive, clean-fronted, smooth-shouldered lamb A more attractively designed lamb, being longer-bodied, cleaner-fronted, and trimmer through the middle	A poorly balanced lamb A rough-topped, crooked-legged lamb A weak-topped lamb that breaks behind the shoulder A heavy-fronted, coarse-shouldered lamb An unattractive, sloppy-made lamb

INFORMATION SHEET

AREA	DESIRABLE	UNDESIRABLE
Carcass	Yield a heavier-muscled carcass A meatier, more muscular carcass with a greater percent of weight in the hindsaddle Yield a trimmer, higher-cutability carcass A higher-dressing carcass with more fat cover A heavier-muscled, trimmer carcass with a lower numerical yield grade Yield a carcass with more leg and loin A heavier-muscled carcass with a larger leg conformation score	A narrow, light-muscled carcass A light-muscled carcass with a low percent of hindsaddle A fat, low-cutability carcass An extremely low-dressing, bare-finished carcass A fat, light-muscled carcass with a high numerical yield grade A carcass with a low percent of leg and loin A narrow carcass with the lowest leg conformation score

TABLE 2

BREEDING SHEEP		
AREA	DESIRABLE	UNDESIRABLE
Size	A larger-framed, growthier ewe that certainly shows more size and scale A larger, stouter-made ewe that had more width to her chest floor, more spring to her forerib and more overall capacity A bigger, stretchier ewe that definitely had more length of hindsaddle, especially more length of rump and more total dimension to the leg A stouter-made ewe that had more substance and volume throughout, especially showing more width and depth of heart and overall spring of ribs	A small, rather short-legged ewe that lacked growth potential A small, extremely refined ewe that was narrow in her chest floor and shallow-hearted A small, short-coupled ewe that was extremely short in the loin and hindsaddle A small-framed, light-boned ewe that was extremely narrow-chested and tight in her rib cage

INFORMATION SHEET

AREA	DESIRABLE	UNDESIRABLE
Size (Continued)	A larger-framed, more upstanding ewe that had more evidence of future growth A longer-bodied, heavier-boned ewe that showed more elevation and skeletal extension An extremely growthy, roomy-middled ewe that exhibited more size, scale and volume An outstanding ewe because of her advantage in size, length, and capacity	A small, early-maturing ewe A small, conventionally patterned ewe that was extremely short coupled A narrow-made, tight-ribbed ewe A small-framed, short-hindsaddled ewe that lacked capacity and volume
Head	Showed more breed character about the head More feminine-headed More masculine-headed (rams) More open-faced	Plain headed; lacked breed character Lacked femininity; coarse, masculine-headed Feminine-headed (rams) Wool blind; too much wool cover on the face
Suffolk head	Blacker about the head and ears Longer, cleaner, more feminine head Longer, more desirable set to the ears Longer with more flip to the ear	Brown about the head and ears Short and plain-headed Had short, erect ears Shorter-eared
Structure	A heavier-boned, straighter-legged, square-standing ewe A more upstanding, longer-legged ewe and definitely exhibited more structural correctness A larger-framed, heavier-boned ewe	A light-boned, crooked-legged ewe A rather short-legged ewe with a narrow set to her rear legs and was especially weak on her pasterns A small, fine-boned ewe that was incorrect on her feet and legs

INFORMATION SHEET

AREA	DESIRABLE	UNDESIRABLE
Condition	An extremely overconditioned ewe A rather fat, overconditioned ewe A more nicely-conditioned ewe (NOTE: For breeding sheep, condition should be mentioned only if very fat or very poor.)	A rather poor, underconditioned ewe A poor, underconditioned ewe A fat overconditioned ewe (NOTE: For breeding sheep, condition should be mentioned only if very fat or very poor.)
Capacity	A smoother-fronted ewe that blended in smoother in the shoulder, had more width through the chest floor and more boldness to the rib A bigger-volumed ewe with more total capacity A deeper, wider-chested ewe, indicating more substance and volume	A narrow-chested ewe that was very coarse and prominent in her shoulders A tight-ribbed, narrow-fronted ewe that lacked capacity A ewe that was narrow through the forerib and extremely pinched in the heart
Muscling	A heavier-muscled ewe that certainly had more natural thickness down the top, especially over the loin, and had more volume of muscle to the leg A stronger-topped, thicker-muscled ewe that was especially longer-rumped and thicker through the leg A ewe that certainly displayed more natural thickness throughout, especially more total dimensions of leg A heavier-muscled ewe with an exceptional top and overall fullness to the leg A nicer-balanced, thicker-made ewe with exceptional volume through the rump and leg A leg that displayed more muscling down the top, showed more flare to the rump, and especially more depth and thickness to the leg	A rather light-muscled, narrow-topped ewe A narrow-made, short-rumped ewe that was easy in her top A slack-framed, light-muscled ewe that was extremely narrow down the top A short-rumped, light-legged ewe A poorly balanced ewe that definitely dropped in the rump and had the shallowest leg in the class A light-muscled ewe that was narrow and tapering in the rump, low in the pins, and stood rather narrow behind

INFORMATION SHEET

AREA	DESIRABLE	UNDESIRABLE
Quality, balance, femininity	A higher-quality, nicer-balanced ewe with more Hampshire breed character about the head A more feminine-headed ewe that was especially freer of wool about the eye A longer-necked, cleaner-fronted ewe A typier ewe with more eye appeal A longer, smoother-necked ewe An extremely stylish ewe that exhibited smoothness and quality A neater-fronted ewe A smoother-shouldered ewe A nicer-balanced, more stylish ewe that certainly had more Suffolk breed character	A plain, low-quality ewe that lacked good breed character A rather coarse-headed ewe that was certainly carrying too much wool around the eye A short-necked, heavy-fronted ewe A rather plain, off-type ewe A short-necked, heavy-fronted ewe A plain ewe that was rather coarse A coarse-fronted ewe A coarse, open-shouldered ewe A poorly-balanced, coarse-headed ewe
Fleece	A longer, denser fleece A more uniform, denser-fleeced ewe freer of black fibers	A short, open-fleeced ewe A coarse, open-fleeced ewe with excessive black fibers

INFORMATION SHEET

- XVI. Purpose of the FFA placing card — Identifying the judge and recording the placing (Figure 20)

(NOTE: It is very important to write clearly. If written incorrectly, the card can cause a team to lose a contest.)

EXAMPLE:

FIGURE 20

FFA PLACING CARD		Contestant's Initial <u>BP</u> No. <u>10-C</u>	Class <u>Hampshire ewes</u>	1-2-3-4	
				1-2-4-3	
Placing Grade _____	Reason Grade _____			1-3-2-4	
				1-3-4-2	
				1-4-2-3	
				1-4-3-2	
				2-1-3-4	
				2-1-4-3	
				2-3-1-4	
				2-3-4-1	X
				2-4-1-3	
				2-4-3-1	
				3-1-2-4	
				3-1-4-2	
				3-2-1-4	
				3-2-4-1	
				3-4-1-2	
				3-4-2-1	
				4-1-2-3	
				4-1-3-2	
				4-2-1-3	
				4-2-3-1	
				4-3-1-2	
				4-3-2-1	

- XVII. Computing placing scores

(NOTE: There are always four animals in a livestock class. The maximum score possible on a class is fifty. A score of fifty points represents a perfect placing, and means that your placings are exactly like the official placings on the class. After the class is judged and the official placings have been announced, you should be able to compute your score. Cuts, or point variations, are made between the different animals in the class. Use simple addition and subtraction to calculate your score.)

- A. Compare your placing to official placing

EXAMPLE:

Official Placing

Your Placing

2-4-3-1

2-3-1-4

2 3 2

(cuts)

INFORMATION SHEET

EXAMPLES: *Official Reasons for Placing Suffolk Ewe Lambs*

This class of Suffolk ewe lambs is placed 1 - 2 - 3 - 4, and is actually a two-pair class. A top pair of longer, taller, more structurally correct ewes and a close bottom pair of smaller-framed ewes with obvious differences in muscle structure and skeletal framework.

Top Pair (Figure 21)

Lamb #1 places over #2 as she is a heavier-muscled, straighter-lined, more nicely balanced ewe lamb. In addition, she is a stouter-made lamb, standing on more substance of bone. Number 1 also has a longer and squarer-made rump, and when viewed from the rear, exhibits more total volume and dimension of muscling. She is meatier through the center portion of her leg and carries her muscling down closer to her hock. However, the #2 ewe lamb is more feminine about her head, as she is longer from poll to muzzle, and is more refined about the bridge of her nose.

FIGURE 21

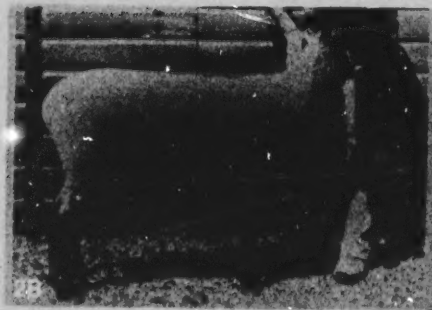
Courtesy of National Suffolk Sheep Association, Columbia, Missouri.

INFORMATION SHEET

Middle Pair (Figure 22)

Lamb #2 easily places over #3 in the middle pair, as she is simply a bigger-framed, more capacious ewe. She stands on more length of leg and is a bolder-fronted, deeper-ribbed ewe. When viewed from the side, she exhibits more length of body, being especially longer through her loin and rump. In addition, she is leveler in her rump structure and possesses an advantage in muscling through the center and lower portion of her leg. Number 2 also reveals more Suffolk breed type and character as evidenced by a longer ear and a smoother, more-refined head. She also stands more correctly on her rear feet and legs, criticizing #3 for being weak on her pasterns.

FIGURE 22



Courtesy of National Suffolk Sheep Association, Columbia, Missouri.

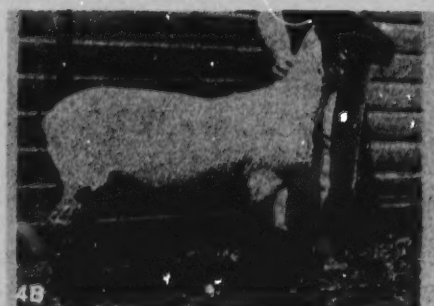
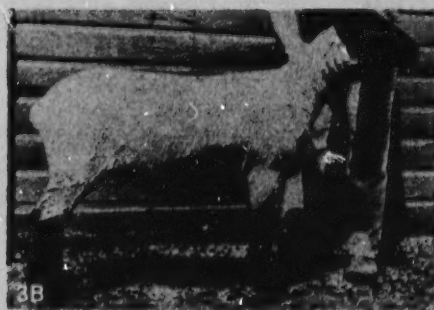
INFORMATION SHEET

Bottom Pair (Figure 23)

In a very close placing, #3 places over #4 in the bottom pair. Number 3 is a taller-fronted, later-maturing ewe that is stronger-topped and more structurally correct in her rear leg placement, criticizing #4 for standing sickle-hocked. When viewed down her top, #3 reveals an advantage in spring of both fore and rear rib. It should be noted, however, that #4 is meatier down her top and exhibits more total volume and dimension of muscle throughout her rump and leg. She also excels #3 in Suffolk breed type and femininity about her head.

However, #4 places last, as she is the smallest-framed, earliest-maturing, most structurally incorrect ewe in the class. She simply lacks the style, balance, and skeletal framework and dimension to place any higher.

FIGURE 23



Courtesy of National Suffolk Sheep Association, Columbia, Missouri.

INFORMATION SHEET

XIX. Steps to follow in taking notes for oral reasons for placings

(NOTE: It is important to learn to take good notes for giving oral reasons for your placings. You might have to judge several classes in a day and give the reasons for your placings at a later time. By taking good notes, you will be able to present a sound set of oral reasons. It is suggested that you carry a 6-by-9-inch stenographer's spiral notebook and a pencil for use in writing your notes. See Figure 24.)

EXAMPLE:

FIGURE 24

		Suffolk Market Lamb Notes 2-1-3-4 Criticisms and Identification Points
1		Narrow lower leg, narrow rump and loin
2		Rough-shouldered, short hindsaddle
3		Fat overfinished, heavy-fronted, low cutability
4		Bare-finished, narrowmade, light-muscled, lowest quality grading
2/1		Heavier muscled, nicer balanced, better profile, heavier-muscled carcass
1/2		Longer hindsaddle, smoother shoulder
1/3		Longer, trimmer patterned, higher cutability
3/1		Width of loin, volume of leg, total muscle
3/4		Heavier muscled, width of top, dimension of leg, heavier-muscled carcass
4/3		Trimmer made, cleaner middle

INFORMATION SHEET

- A. Identify the class
- B. Write your placing at the top of the page
- C. Write the numbers 1 through 4 down the side of the page, leaving approximately three lines between the numbers
- D. Take notes on each animal to identify strong points and criticisms of each
- E. Take notes by pairs, giving advantages as well as grants

(NOTE: The following written reasons for placings were composed from notes for oral reasons for placings.)

EXAMPLE:

SUFFOLK MARKET LAMBS

I preferred an alignment of 2-1-3-4 on this class of Suffolk market lambs, starting with the most powerfully muscled, nicest-balanced lamb in the class. However, if I could change 2, I would like to see him flatter and smoother through his shoulder. Nevertheless, I still selected 2 over 1 in my initial pair, mainly due to 2's distinct advantage in muscle, as 2 did show more shape and expression of muscle down his top, was wider and deeper over his loin, showed more expression of muscle out his rump, and had a fuller, plumper leg. In addition, 2 also was a much more attractive, higher-profilling lamb that was straighter and stronger down his top and blended more smoothly from front to rear. And, therefore, due to 2's advantage in muscle, he should yield the heaviest muscled carcass with the highest leg conformation score. I admit that 1 was a longer-hindsaddled lamb that was smoother through his shoulder; however, I criticize 1 and preferred to place him second because he lacked the total muscle expression of my first-place lamb.

Now, in moving to my middle pair, I still liked 1 over 3 mainly because 1 was a longer, cleaner-patterned lamb that was especially longer through his loin and rump. Likewise, 1 was a more correctly finished lamb that was more optimum in his fat cover down his top and over his rack; and thus, due to 1's extreme advantage in length of hindsaddle and trimness, 1 should yield a higher-cutability carcass with a higher percent hindsaddle. I readily concede that 3 did show more width over his loin and exhibited more volume of muscle to his leg; however, I fault 3 and preferred to place him third as he was an overfinished lamb that was wasty through his lower one-third and was heavy-fronted.

INFORMATION SHEET

But at the same time, I still chose to place 3 over 4 in my final and concluding pair, as 2 was a much heavier-muscled, thicker-made lamb that possessed more muscle shape down his top and definitely had more width and dimension of muscle through his rump and down into his leg. Therefore, due to 3's dominating advantage in muscle, he should hang a much heavier-middled carcass; however, this works to 4's disadvantage as 4 was an extremely underfinished lamb that narrowed down his top and tapered through his leg. Therefore, due to 4's disadvantage in muscle and finish, he should yield the lightest muscled carcass with the lowest probability of grading "choice."

Written by: Jarold Callahan
Instructor, Animal Science
Oklahoma State University

XX. Techniques for presenting oral reasons for placings

- A. Speak with a clear, powerful voice
- B. Open reasons with a precise opening statement
- C. Never carry notes into reason room
- D. Stand erect, with feet and shoulders aligned
- E. Stand approximately 4 to 8 feet away from reason-taker
- F. Talk in a firm voice

(NOTE: Avoid shouting.)

- G. Use good voice control, both in speed and volume

(NOTE: Emphasis on certain points is very important when giving reasons for placings.)

- H. Present reason-taker with an accurate picture of the animal

- I. Avoid body movement

(NOTE: Some head movement is acceptable.)

- J. Use identification characteristics whenever possible to let the reason-taker know that you saw the class

- K. Look reason-taker squarely in the eye

- L. Stay within the allowable two minutes

(NOTE: The length of the oral reasons for placings should be from one minute and twenty seconds to one minute and forty-five seconds.)

INFORMATION SHEET

- M. Avoid using more than three terms in succession
- N. Never conclude your reasons with, "For these reasons I placed this class ..."

XXI. Steps to follow in presenting oral reasons for placings

(NOTE: For the purpose of your reasons, a class of four animals is divided into three pairs: a top pair, a middle pair, and a bottom pair. Follow the basic outline for a set of reasons for a sample placing of 1 - 2 - 3 - 4.)

A. Make opening remarks

EXAMPLE: Give name of class and how you placed it; give criticisms and outstanding good points.

(NOTE: In some cases a general statement about the entire class may be more applicable.)

B. Discuss top pair

EXAMPLES: Give reasons for placing 1 over 2, using comparative terms.

Give grants for 2 over 1, using comparative terms to point out advantages of 2 over 1.

(NOTE: In close placings, several grants would be desirable as long as they are true.)

Give criticisms of 2, using descriptive terms.

(NOTE: Always criticize an animal on its own merits rather than by comparing it to the animal placed above it.)

C. Discuss middle pair

EXAMPLES: Give reasons for placing 2 over 3.

Give grants for 3 over 2.

Give criticisms of 3.

D. Discuss bottom pair

EXAMPLES: Give reasons for placing 3 over 4.

Give grants for 4 over 3.

Give criticisms of 4.

SHEEP BREEDS AND SELECTION
UNIT IV

ASSIGNMENT SHEET #1 — IDENTIFY MAJOR BREEDS OF SHEEP

NAME _____

SCORE _____

When purchasing, judging, or selecting breeds of sheep, you must be able to call the breed by its correct name.

Shown below and on the following pages are photographs of different breeds of sheep. Look closely at each photograph and identify the breed by writing its correct name in the blank below the photograph.



A. _____

Courtesy of Sheep Breeder, Columbia, Missouri.

ASSIGNMENT SHEET #1



B. _____

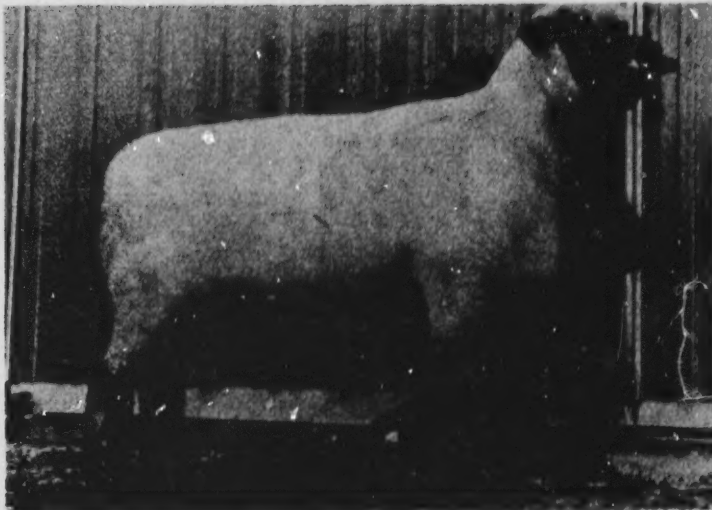
Courtesy of *Sheep Breeder*, Columbia, Missouri.



C. _____

Courtesy of *Sheep Breeder*, Columbia, Missouri.

ASSIGNMENT SHEET #1



D. _____

Courtesy of *Sheep Breeder*, Columbia, Missouri.



E. _____

Courtesy of *Sheep Breeder*, Columbia, Missouri.

ASSIGNMENT SHEET #1



F. _____

Courtesy of the Animal Science Department, Oklahoma State University, Stillwater, Oklahoma.

SHEEP BREEDS AND SELECTION UNIT IV

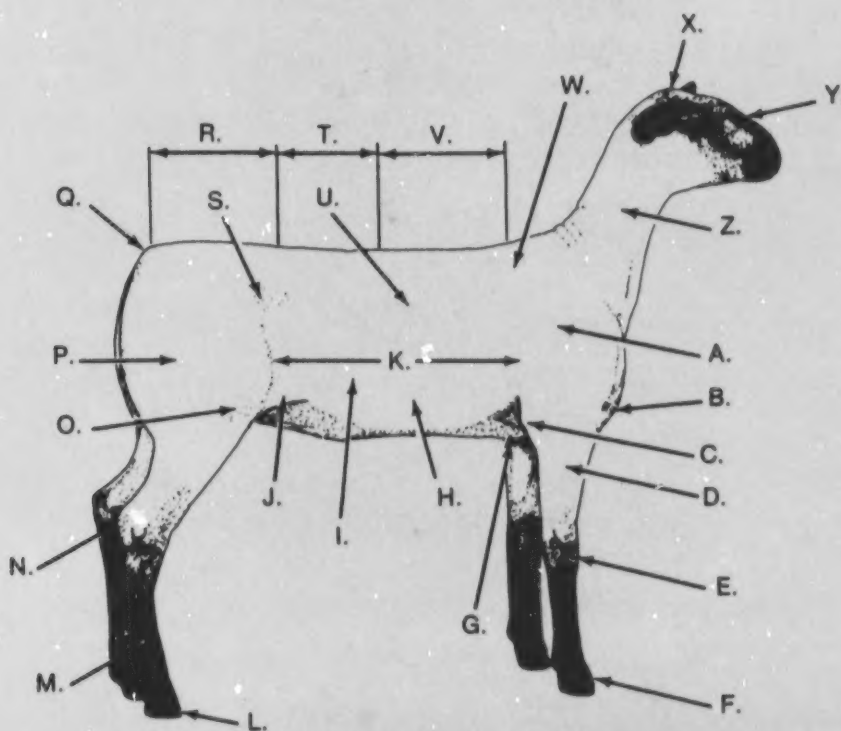
ASSIGNMENT SHEET #2 — LABEL THE PARTS OF A SHEEP

NAME _____

SCORE _____

When judging sheep, you will be referring to different parts of the animal, and you must use the correct terminology to call the parts by their correct names.

Label the parts of the sheep in the drawing below. Write the name of the part in the corresponding blank on the following page.



ASSIGNMENT SHEET #2

A.	
B.	
C.	
D.	
E.	
F.	
G.	
H.	
I.	
J.	
K.	
L.	
M.	
N.	
O.	
P.	
Q.	
R.	
S.	
T.	
U.	
V.	
W.	
X.	
Y.	
Z.	

SHEEP BREEDS AND SELECTION UNIT IV

ASSIGNMENT SHEET #3 — EVALUATE CHARACTERISTICS OF A EWE

NAME _____ SCORE _____

In Section V of the Information Sheet, you studied the desirable characteristics of a ewe. This assignment sheet allows you to practice what you learned.

Evaluate the characteristics of each ewe shown in the following drawings. List desirable and undesirable characteristics.

A.



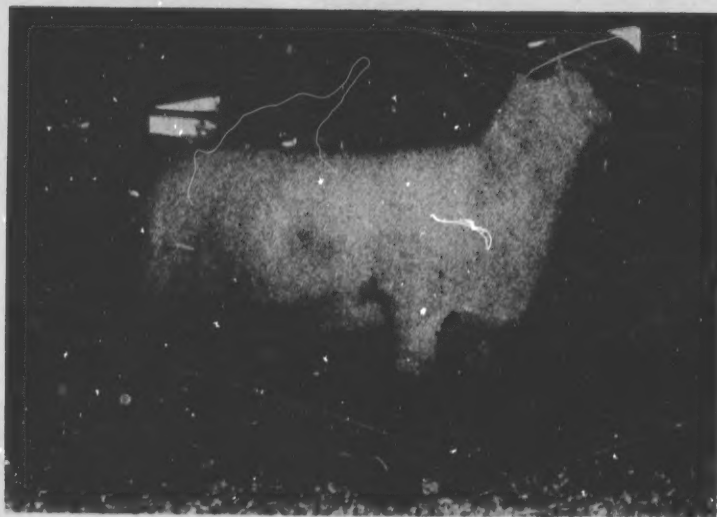
Courtesy of *Sheep Breeder*, Columbia, Missouri.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #3

B.



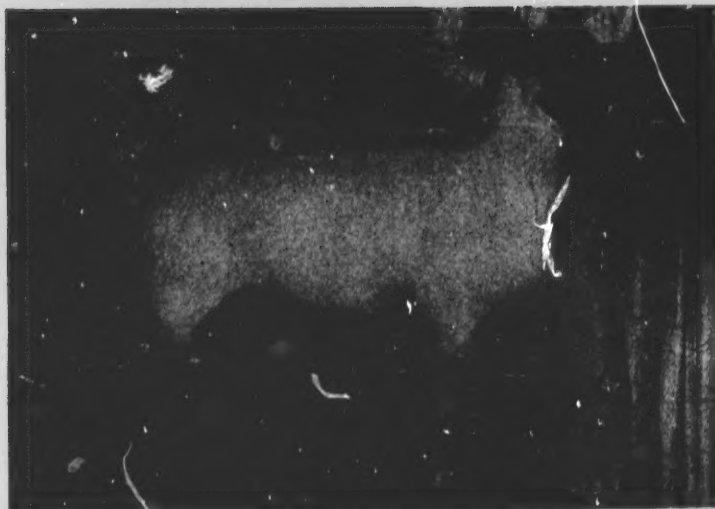
Courtesy of *Sheep Breeder*, Columbia, Missouri.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #3

C.



Courtesy of *Sheep Breeder*, Columbia, Missouri.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #3

D.



Courtesy of Sheep Breeder, Columbia, Missouri.

Desirable Traits

Undesirable Traits

**SHEEP BREEDS AND SELECTION
UNIT IV**

ASSIGNMENT SHEET #4 — EVALUATE CHARACTERISTICS OF A RAM

NAME _____

SCORE _____

In Section V of the Information Sheet, you studied the desirable characteristics of a ram. This assignment sheet allows you to practice what you learned.

Evaluate the characteristics of each ram shown in the following drawings. List desirable and undesirable characteristics.

A.



Courtesy of *Sheep Breeder*, Columbia, Missouri.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #4

B.



Courtesy of *Sheep Breeder*, Columbia, Missouri.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #4

C.



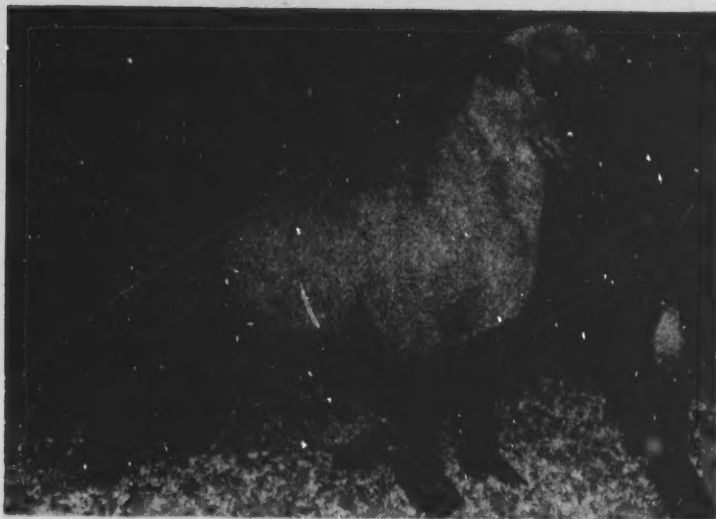
Courtesy of *Sheep Breeder*, Columbia, Missouri.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #4

D.



Courtesy of the Animal Science Department, Oklahoma State University, Stillwater, Oklahoma.

Desirable Traits

Undesirable Traits

SHEEP BREEDS AND SELECTION UNIT IV

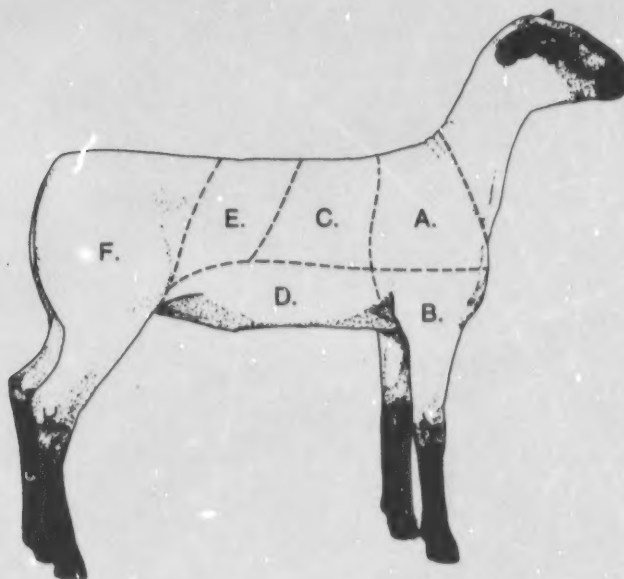
ASSIGNMENT SHEET #5 — LABEL WHOLESALE CUTS OF LAMB WITH THEIR PROPER NAMES AND DESIRED PERCENTAGES OF TOTAL CARCASS YIELD

NAME _____

SCORE _____

When judging a class of market lambs, you consider many things; but one of the most important is carcass quality and volume. The carcass is composed of high-priced and low-priced cuts. The purpose of this assignment is to enable you to label wholesale cuts of lamb.

Identify the wholesale cuts of lamb in the drawing below. Write the correct names of the cuts and their percentages of carcass yield in the corresponding blanks.



A.	_____	_____ %
B.	_____	_____ %
C.	_____	_____ %
D.	_____	_____ %
E.	_____	_____ %
F.	_____	_____ %

SHEEP BREEDS AND SELECTION UNIT IV

ASSIGNMENT SHEET #6 — USE CORRECT SHEEP-JUDGING TERMS FOR DESIRABLE AND UNDESIRABLE TRAITS

NAME _____

SCORE _____

One of the most important things that you can learn as a vocational agriculture student is how to give a set of oral reasons for placings. Giving reasons for placings provides you with an opportunity to organize your thoughts, present your ideas and your opinions, and to justify why you placed a class of animals. Many people judge livestock, but very few have the capability of giving a good set of oral reasons for their placings. One of the main reasons that individuals have trouble giving reasons for placings is that they do not know how to use the correct terminology to justify their placing.

Listed below are terms for desirable and undesirable traits. The purpose of this assignment is for you to be able to state a term for a desirable trait when given its opposite term, or state the term for an undesirable trait when given its opposite. In the blanks beside the terms, write the opposite terms.

- | | |
|--|-------|
| A. A tall, upstanding wether | _____ |
| | _____ |
| B. A lamb with tremendous length of hind-saddle | _____ |
| | _____ |
| C. A narrow, light-muscled lamb | _____ |
| | _____ |
| D. The thickest, squarest-rumped lamb | _____ |
| | _____ |
| E. A firmer-finished lamb | _____ |
| | _____ |
| F. A fat, overfinished lamb | _____ |
| | _____ |
| G. A lamb that is trimmer up front and cleaner through the lower one-third | _____ |
| | _____ |

ASSIGNMENT SHEET #6

- H. A nicer-balanced lamb _____

- I. An unattractive, sloppy-made lamb _____

- J. Yield a carcass with more leg and loin _____

- K. Yield a trimmer, higher-cutability carcass _____

- L. A narrow, light-muscled carcass _____

- M. A small, early-maturing ewe _____

- N. More feminine-headed _____

- O. More open-faced _____

- P. Short and plain-headed _____

- Q. A light-boned, crooked-legged ewe _____

- R. A rather poor, underconditioned ewe _____

- S. A narrow-made, short-rumped ewe that was easy in her top _____

ASSIGNMENT SHEET #6

T. A longer-necked, cleaner-fronted ewe

U. A smoother-shouldered ewe

V. A longer, denser fleece

SHEEP BREEDS AND SELECTION UNIT IV

ASSIGNMENT SHEET #7 — USE FFA PLACING CARDS

NAME _____

SCORE _____

As a vocational agriculture student and as an FFA member, you will have opportunities to participate in livestock judging contests. The contest may be held on a local, state, or national level. Judging contests provide you with an opportunity to apply the skills you have learned.

All livestock judging contests use the placing card. You must learn to use the card correctly. The card identifies you as a contestant, and it relates to the officials just how you placed the class.

Before turning in your placing card, make sure that the card is filled out correctly and completely. There should be only one mark on the card indicating your placings of the class. Always use a pencil to fill out the card. All parts of the card should be filled out.

EXAMPLE:

FFA PLACING CARD		Contestant's Initial <u>BP</u>	No. <u>12-B</u>	
		Class <u>Dorset rams</u>		
Placing Grade _____	Reason Grade _____	1-2-3-4		
		1-2-4-3		
		1-3-2-4		
		1-3-4-2		
		1-4-2-3		
		1-4-3-2		
		2-1-3-4		
		2-1-4-3		
		2-3-1-4	X	
		2-3-4-1		
		2-4-1-3		
		2-4-3-1		
		3-1-2-4		
		3-1-4-2		
		3-2-1-4		
		3-2-4-1		
		3-4-1-2		
		3-4-2-1		
		4-1-2-3		
		4-1-3-2		
		4-2-1-3		
		4-2-3-1		
		4-3-1-2		
		4-3-2-1		

ASSIGNMENT SHEET #7

Using the information given below, fill out the following cards.

- A. Use your correct initials. You are contestant number 100-A, and you are judging a class of market lambs. You placed the class 2 - 1 - 4 - 3.

FFA PLACING CARD		Contestant's Initial _____	No. _____
		Class _____	
Placing Grade _____ Reason Grade _____			
		1-2-3-4	
		1-2-4-3	
		1-3-2-4	
		1-3-4-2	
		1-4-2-3	
		1-4-3-2	
		2-1-3-4	
		2-1-4-3	
		2-3-1-4	
		2-3-4-1	
		2-4-1-3	
		2-4-3-1	
		3-1-2-4	
		3-1-4-2	
		3-2-1-4	
		3-2-4-1	
		3-4-1-2	
		3-4-2-1	
		4-1-2-3	
		4-1-3-2	
		4-2-1-3	
		4-2-3-1	
		4-3-1-2	
		4-3-2-1	

ASSIGNMENT SHEET #7

- B. Use your correct initials. You are contestant number 64-D, and you are judging a class of Dorset ewes. You placed the class 2 - 1 - 3 - 4.

FFA PLACING CARD		Contestant's Initial _____	No. _____	Class _____	1-2-3-4	
					1-2-4-3	
Placing Grade _____					1-3-2-4	
					1-3-4-2	
Reason Grade _____					1-4-2-3	
					1-4-3-2	
					2-1-3-4	
					2-1-4-3	
					2-3-1-4	
					2-3-4-1	
					2-4-1-3	
					2-4-3-1	
					3-1-2-4	
					3-1-4-2	
					3-2-1-4	
					3-2-4-1	
					3-4-1-2	
					3-4-2-1	
					4-1-2-3	
					4-1-3-2	
					4-2-1-3	
					4-2-3-1	
					4-3-1-2	
					4-3-2-1	

ASSIGNMENT SHEET #7

- C. Use your correct initials. You are contestant number 83-B, and you are judging a class of Suffolk rams. You placed the class 2 - 3 - 4 - 1.

FFA PLACING CARD		Contestant's Initial _____	No. _____	Class _____	1-2-3-4	
					1-2-4-3	
Placing Grade _____					1-3-2-4	
					1-3-4-2	
Reason Grade _____					1-4-2-3	
					1-4-3-2	
					2-1-3-4	
					2-1-4-3	
					2-3-1-4	
					2-3-4-1	
					2-4-1-3	
					2-4-3-1	
					3-1-2-4	
					3-1-4-2	
					3-2-1-4	
					3-2-4-1	
					3-4-1-2	
					3-4-2-1	
					4-1-2-3	
					4-1-3-2	
					4-2-1-3	
					4-2-3-1	
					4-3-1-2	
					4-3-2-1	

SHEEP BREEDS AND SELECTION
UNIT IV

ASSIGNMENT SHEET #8 — COMPUTE PLACING SCORES

NAME _____

SCORE _____

There is a total of fifty possible points in a livestock class. A score of fifty points represents a perfect score. There are 24 possible placings on any given class. Prior to your judging the class, a group of selected officials will have already evaluated the class, determined the official placings, and identified the different cuts that each class should receive. The cuts are used to compute your score. The purpose of this assignment is to give you practice in computing your scores.

Use your Information Sheet, Section XVII to assist in working the following problems. Show your work.

- A. Class 1, Dorset ewes. Official placings are 4 - 1 - 3 - 2 with cuts of 4, 2, 2. You placed the class 2 - 3 - 4 - 1. What would be your correct score?

Your score = _____

- B. Class 2, market lambs. Official placings are 1 - 4 - 3 - 2 with cuts of 4, 4, 2. You placed the class 1 - 3 - 4 - 2. What would be your correct score?

Your score = _____

ASSIGNMENT SHEET #8

- C. Class 3, Hampshire rams. Official placings are 4 - 3 - 1 - 2 with cuts of 5, 2, 2. You placed the class 3 - 4 - 2 - 1. What would be your correct score?

Your score = _____

- D. Class 4, Southdown ewes. Official placings are 1 - 2 - 3 - 4 with cuts of 2, 4, 5. You placed the class 3 - 1 - 4 - 2. What would be your correct score?

Your score = _____

SHEEP BREEDS AND SELECTION
UNIT IV

ASSIGNMENT SHEET #9 — EVALUATE A SET OF WRITTEN REASONS
FOR PLACING A CLASS OF SHEEP

NAME _____ SCORE _____

Reasons for placing a class of sheep must be clear and must contain standard terminology. This assignment will help you become familiar with standard terms of comparison.

PART I

Listed below is a set of reasons for placing a class of Suffolk ewes. Read the reasons, circle the terms describing desirable traits, and underline the terms describing undesirable traits.

REASONS FOR PLACING SUFFOLK EWES

In placing the Suffolk ewes 4 - 3 - 1 - 2, I preferred the largest, biggest-volumed, thickest ewe in the class. But if I could change 4, I would like to see her stronger-topped.

Nevertheless, in the top pair, 4 as compared to 3 was a bigger-framed, growthier ewe, that stood on more length of cannon. Also 4 was a thicker-topped, heavier-muscled ewe, with more total volume of muscle to her leg. Furthermore, she was a deeper-bodied ewe with more width of chest. I'll be the first to admit 3 was a more feminine ewe with more length of neck and also was stronger topped. But I fault her and placed her second as she was a short-bodied, heavy-conditioned ewe.

Coming to my middle pair, I selected 3 over 1. Three certainly was a more attractive, straighter-lined ewe that was leveler-rumped and did stand wider on both front and rear. Moreover, she was blacker about her points and did exhibit more Suffolk breed character. I realize that 1 was a more elevated, longer-patterned ewe, but at the same time, she was a fine-boned, buck-kneed ewe that stood close at her hocks. Also, 1 was a high-loined ewe that was steep out her rump.

In closing with my bottom pair, I felt 1 was a bigger-outlined, longer-patterned ewe that excelled 2 in length of hindsaddle. In addition, she was a more feminine-fronted, flatter-shouldered ewe that was longer-necked and did have a longer, more refined face with a more correct ear setting. I concede 2 was a heavier-boned, straighter-lined ewe, but I penalized her and place her last as she was a small-framed, short-bodied ewe. Also she was a plain-headed, short-eared ewe, that was the most conventional in the class.

ASSIGNMENT SHEET #9

PART II

Evaluate the reasons given in Part I for clarity, correct style, and correctness by answering the following questions.

A. Were the reasons written in a clear, concise manner? ☐ Yes ☐ No

B. Did the reasons convince you that the class was placed correctly? ☐ Yes ☐ No

Justify your answer. _____

C. Did the writer use correct terminology? ☐ Yes ☐ No

D. Did you find any terms for desirable or undesirable traits that lacked meaning or purpose? ☐ Yes ☐ No

If so, name those terms. _____

E. Would you make changes in the reasons? ☐ Yes ☐ No

Write your changes. _____

F. Could the reasons be given in less than two minutes? ☐ Yes ☐ No

G. Would the reason-taker be able to identify the animals from the judge's reasons? ☐ Yes ☐ No

Why or why not? _____

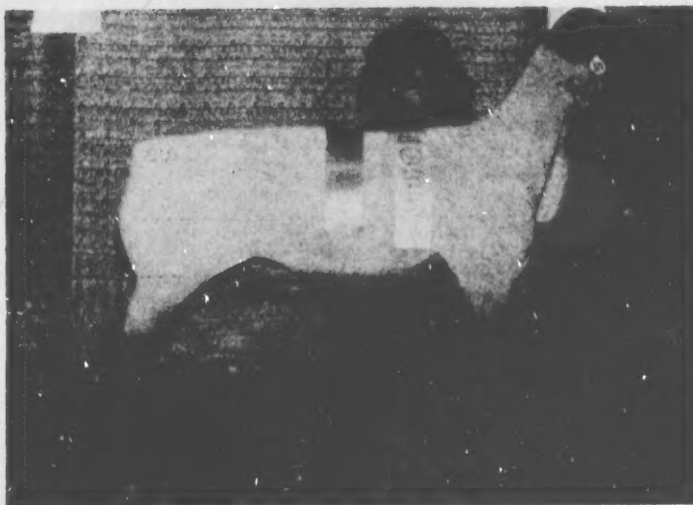
**SHEEP BREEDS AND SELECTION
UNIT IV****ASSIGNMENT SHEET #10 — EVALUATE MARKET LAMBS**

NAME _____

SCORE _____

This assignment will help you judge market lambs. Below and on the following pages are photographs of lambs. Evaluate the characteristics of each animal as a market lamb. List the desirable and undesirable traits.

A.



Courtesy of the Animal Science Department, Oklahoma State University, Stillwater, Oklahoma.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #10

B.



Courtesy of the Animal Science Department, Oklahoma State University, Stillwater, Oklahoma.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #10

C.



Courtesy of the Animal Science Department, Oklahoma State University, Stillwater, Oklahoma.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #10

D.



Courtesy of Sheep Breeder, Columbia, Missouri.

Desirable Traits

Undesirable Traits

ASSIGNMENT SHEET #10

E.



Courtesy of the Animal Science Department, Oklahoma State University, Stillwater, Oklahoma.

Desirable Traits

Undesirable Traits

**SHEEP BREEDS AND SELECTION
UNIT IV****ASSIGNMENT SHEET #11 — JUDGE A CLASS OF MARKET LAMBS**

NAME _____

SCORE _____

This assignment will give you experience judging a class of market lambs. Judge the class that has been set up for you. The instructor or a junior or senior vocational agriculture student has already placed the class.

Take notes and write a set of reasons for your placings on the class. Be prepared to give the reasons when called upon by the instructor.

Class Name _____

Placings _____

A. Take notes on the class.

1. _____

2. _____

3. _____

4. _____

B. Write reasons for placings on the class.

ASSIGNMENT SHEET #11

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or printed text on the paper. A small, faint mark is visible near the center-right of the page.

**SHEEP BREEDS AND SELECTION
UNIT IV**

ASSIGNMENT SHEET #12 — JUDGE A CLASS OF BREEDING SHEEP

NAME _____

SCORE _____

The more practice judging sheep you have, the better judge you will be. Judge the breeding class that has been set up for you. The instructor or a junior or senior student has already placed the class.

Take notes and write a set of reasons for your placings on the class. Be prepared to give the reasons for your placings when called upon by the instructor.

Class Name _____

Placings _____

A. Take notes on the class.

1. _____

2. _____

3. _____

4. _____

B. Write reasons for placings on the class.

ASSIGNMENT SHEET #12

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

SHEEP BREEDS AND SELECTION

UNIT IV

ASSIGNMENT SHEET #13 — WRITE A SET OF REASONS FOR PLACING A CLASS OF SHEEP

NAME _____ SCORE _____

Your instructor will put together a class of sheep for you to judge. Write your placing below. Take a few minutes to make notes to formulate your ideas before writing your reasons for the placings. Use the remaining space on this sheet to write the reasons for your placings.

After you have finished your reasons, go back through them. Look at what you said. Are your reasons for your placings convincing? Do your reasons separate the animals, one from the other, and particularly, your top placing from your bottom placing? Did you use correct terminology for desirable and undesirable traits?

Class _____ **Placings** _____

[illegible]

SHEEP BREEDS AND SELECTION
UNIT IVASSIGNMENT SHEET #14 — GIVE A SET OF ORAL REASONS
FOR PLACING A CLASS OF SHEEP

NAME _____ SCORE _____

Giving reasons orally takes a lot of practice. Study the reasons you wrote for the placings in Assignment Sheet #13 and be prepared to give the reasons orally to your instructor or to a junior or senior vocational agriculture student. Your oral reasons should describe to the reason-taker just how you placed the class. In order to obtain a good score, you must convince the reason-taker that your placings are correct.

It is desirable for you to read over the reasons for your placings several times. Do not attempt to memorize the reasons; just remember the good points of each animal and the grants. You should have a good opening statement. Stand in front of a mirror and practice your reasons for placings several times.

To help you prepare for giving the reasons for your placings, answer the following questions.

- A. Do you have a good opening statement? Yes _____ No _____
- B. Do your reasons sound good? Yes _____ No _____
- C. Do your reasons grant one animal over the other? Yes _____ No _____
- D. Do your terms tie into phrases? Yes _____ No _____
- E. Can the reasons be given in less than two minutes? Yes _____ No _____

Review Sections XX and XXI in the Information Sheet, and then give your oral reasons for your placings to your instructor or to a junior or senior vocational agriculture student.

SHEEP BREEDS AND SELECTION
UNIT IVASSIGNMENT SHEET #15 — USE RESOURCE MATERIALS TO LOCATE
INFORMATION ABOUT SHEEP BREEDS

NAME _____ SCORE _____

It is somewhat difficult to state specifically the main reason why certain individuals select one breed over another. The different breed associations and the members within those associations have worked hard to improve the quality of their breeds; the bottom line for most breed selection is this: *personal preference*. The purpose of this assignment is for you to select a breed, and to research the background and characteristics of the breed, and other information made available by the respective breed associations.

The following information should be of assistance to you while conducting your research.

- Information received from the different breed associations
- Breed magazines and journals
- Textbook: *Modern Breeds of Livestock* by Hilton M. Briggs and Dinus M. Briggs, Macmillan Publishing Co., Inc., New York, 1980.

Choose a breed to research and answer the following questions.

Breed _____

- A. Where did the breed originate? _____
- B. What is the breed's color pattern? _____
- C. What are the breed's body and head characteristics? _____
- D. What are considered to be some strong points of the breed? _____

- E. What are considered to be some weak points of the breed? _____

- F. When was the breed association for this breed formed? _____
- G. What is the name and address of the breed association for this breed? _____

ASSIGNMENT SHEET #15

- H. How many animals have been recorded in the breed association? _____

- I. Who is presently serving as the breed association secretary? _____

- J. What is the name of the field person who serves your state? _____

- K. Does the breed association publish a newsletter, journal, or magazine? _____
If yes, what is the name of the newsletter, journal, or magazine?

- L. How does the breed rate as a market animal? _____
- M. Does the breed hang up a good, usable carcass? _____
- N. What is the carcass length? _____ Loin eye? _____ square inches
- O. What type of disposition does the breed have? _____
- P. Are the ewes considered to be good milkers? _____
- Q. Are the rams active breeders? _____
- R. How does the breed cross in a crossbreeding program? _____

- S. What does the information say about growth rate? _____

- T. What is your opinion of the breed? _____

- U. If you were to go into the sheep business, would you purchase this breed? _____
Justify your answer. _____

SHEEP BREEDS AND SELECTION
UNIT IV

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

- | | |
|--------------|----------------|
| A. Suffolk | D. Shropshire |
| B. Dorset | E. Southdown |
| C. Hampshire | F. Rambouillet |

Assignment Sheet #2

- | | |
|----------------|--------------------|
| A. Shoulder | N. Hock |
| B. Breast | O. Stifle |
| C. Elbow | P. Leg of lamb |
| D. Foreshank | Q. Dock |
| E. Knee | R. Rump |
| F. Pastern | S. Hip |
| G. Foreflank | T. Loin |
| H. Belly | U. Ribs |
| I. Last rib | V. Back or rack |
| J. Rear flank | W. Top of shoulder |
| K. Body | X. Poll |
| L. Hoof | Y. Face |
| M. Cannon bone | Z. Neck |

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #3

A. Desirable Traits

Extremely large-framed
Tremendous skeletal extension
Straight in her lines
Long-necked, clean-fronted
Very feminine head, long ears, and a
great ear setting
Jet black color

Undesirable Traits

Toe out slightly
Slight droop in rear

B. Desirable Traits

Heavy-muscled
Big-boned
Good spring of ribs

Undesirable Traits

Low-set, short-coupled
Early maturing
Weak on front pastern
Short-necked
Coarse in head
Some wool in eye channel

C. Desirable Traits

Extremely tall
Long-bodied, large volume
Long neck
Straight top
Heavy-boned
Feminine head
Adequate in muscling
Clean fleece (free of dark fiber)

Undesirable Traits

Little straight on hock
Bit weak on pastern
Little heavy in front

D. Desirable Traits

Moderately long
Well-muscled
Straight top
Correct on feet and legs
Adequate bone
Desirable Suffolk head with long ears
Heavy-boned
Big-volumed

Undesirable Traits

Too short-legged
Heavy-breasted
Wide-muzzled
Lacks femininity in head

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #4

A. Desirable Traits

Extremely tall
Long-bodied
Strong top
Good testicular development
Moderate in volume and muscling

Undesirable Traits

A bit heavy-fronted
Turns out on front feet
A bit easy on front pasterns
Short muzzle

B. Desirable Traits

Extremely tall
Deep bodied
Heavy-muscled
Very long neck
Masculine head
Long ears
Good ear setting
Heavy bone
Excellent on rear legs and pastern

Undesirable Traits

Short body
Bit heavy in the middle

C. Desirable Traits

Thick top with adequate muscling
Heavy bone
Straight top

Undesirable Traits

Little thick up front
Short neck
Needs to be longer and taller

D. Desirable Traits

Straight-lined
Good on wool
Covering on head
Depth of rib
Dense fleece

Undesirable Traits

Small-framed ram
Short-coupled and short in hindsaddle
Flat in leg
Heavy in breast
Weak on pastern
Roman nose

Assignment Sheet #5

A.	Shoulder	25%
B.	Shank	4%
C.	Rack	13%
D.	Flank and breast	14%
E.	Loin	11%
F.	Leg (Sirloin on)	33%

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #6

- A. A short, low-set wether
- B. A short-hindsaddled lamb
- C. The thickest, heaviest-muscled lamb in the class
- D. A lamb that narrows out at the rump
- E. A soft, spongy lamb
- F. A cleaner-designed, trimmer lamb
- G. A heavy-fronted lamb that exhibits too much lower one-third
- H. A poorly balanced lamb
- I. A more attractively designed lamb, being longer-bodied, cleaner-fronted, and trimmer through the middle
- J. A carcass with a low percent of leg and loin
- K. A fat, low-cutability carcass
- L. Yield a heavier-muscled carcass
- M. A larger-framed, more upstanding ewe that had more evidence of future growth
- N. Lacked femininity; coarse, masculine-headed
- O. Wool blind; too much wool cover on face
- P. Longer, cleaner, more feminine head
- Q. A heavier-boned, straighter-legged, square-standing ewe
- R. An extremely overconditioned ewe
- S. A stronger-topped, thicker-muscled ewe that was especially longer-rumped and thicker through the leg
- T. A short-necked, heavy-fronted ewe
- U. A coarse, open-shouldered ewe
- V. A short, open-fleeced ewe

Assignment Sheet #7

A.

FFA PLACING CARD	
Contestant's Initial	No. 100-A
Class Market lambs	
1-2-3-4	
1-2-4-3	
1-3-2-4	
1-3-4-2	
1-4-2-3	
1-4-3-2	
2-1-3-4	
2-1-4-3	X
2-3-1-4	
2-3-4-1	
2-4-1-3	
2-4-3-1	
3-1-2-4	
3-1-4-2	
3-2-1-4	
3-2-4-1	
3-4-1-2	
3-4-2-1	
4-1-2-3	
4-1-3-2	
4-2-1-3	
4-2-3-1	
4-3-1-2	
4-3-2-1	

763

B.

FFA PLACING CARD	
Contestant's Initial	No. 64-D
Class Dorset ewes	
1-2-3-4	
1-2-4-3	
1-3-2-4	
1-3-4-2	
1-4-2-3	
1-4-3-2	
2-1-3-4	X
2-1-4-3	
2-3-1-4	
2-3-4-1	
2-4-1-3	
2-4-3-1	
3-1-2-4	
3-1-4-2	
3-2-1-4	
3-2-4-1	
3-4-1-2	
3-4-2-1	
4-1-2-3	
4-1-3-2	
4-2-1-3	
4-2-3-1	
4-3-1-2	
4-3-2-1	

762

ANSWERS TO ASSIGNMENT SHEETS

C.

FFA PLACING CARD		Contestant's Initial	No.	83-B	
		Class		Suffolk rams	
Placing Grade					
Reason Grade					

1-2-3-4	
1-2-4-3	
1-3-2-4	
1-3-4-2	
1-4-2-3	
1-4-3-2	
2-1-3-4	
2-1-4-3	
2-3-1-4	
2-3-4-1	X
2-4-1-3	
2-4-3-1	
3-1-2-4	
3-1-4-2	
3-2-1-4	
3-2-4-1	
3-4-1-2	
3-4-2-1	
4-1-2-3	
4-1-3-2	
4-2-1-3	
4-2-3-1	
4-3-1-2	
4-3-2-1	

Assignment Sheet #8

- A. 28
 B. 46
 C. 43
 D. 31

Assignment Sheet #9 — Evaluated to the satisfaction of the instructor

(NOTE: These criteria are suggestions for evaluating student responses.)

Part I — Were terms for desirable traits circled and terms for undesirable traits underlined?

Part II

A.-C. Were the student's responses correct?

ANSWERS TO ASSIGNMENT SHEETS

- D. Did the student find any terms for desirable or undesirable traits that lacked meaning or purpose?
- E. Did the student suggest that changes should be made in the reasons? Were they good changes?
- F. Could the reasons be given in less than two minutes?

Assignment Sheet #10

A. Desirable Traits

Straight-topped
Level-rumped
Good overall volume
Tail-fronted
Long-bodied

Undesirable Traits

Lacks balance and eye appeal
Slightly heavy-fronted
A little wasty middle

B. Desirable Traits

Long-bodied
Long hindsaddle
Heavily muscled

Undesirable Traits

Conventional in his type
Too round in his muscle structure
Short-legged
Drooped in rump

C. Desirable Traits

Extremely well-balanced
Modern type
Smooth, long flat muscle

Undesirable Traits

Slightly drooped in rump

D. Desirable Traits

Good overall length and volume
Good height
Good head and ear set
Straight, strong top

Undesirable Traits

Slightly heavy-fronted
Lacks thickness in lower leg

E. Desirable Traits

Straight-topped
Long-bodied
Adequate height
Level rump

Undesirable Traits

Heavy middle
Lacks muscling in lower leg

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #11 — Evaluated to the satisfaction of the instructor
(NOTE: These criteria are suggestions for evaluating student responses.)

- A. Did the student place the class correctly?
- B. What was the student's score on the placing?

Assignment Sheet #12 — Evaluated to the satisfaction of the instructor
(NOTE: These criteria are suggestions for evaluating student responses.)

- A. Did the student place the class correctly?
- B. What was the student's score on the placing?

Assignment Sheet #13 — Evaluated to the satisfaction of the instructor
(NOTE: These criteria are suggestions for evaluating student responses.)

- A. Did the student use correct terminology for desirable and undesirable traits?
- B. Did the student tie the phrases together?
- C. Were the reasons convincing? Did the reasons separate the pairs?
- D. Could the reasons be given in less than two minutes?

Assignment Sheet #14 — Evaluated to the satisfaction of the instructor
(NOTE: These criteria are suggestions for evaluating student responses.)

- A. Did the student speak with an appropriate voice?
- B. Were the reasons convincing?
- C. Were the reasons presented in less than two minutes?
- D. Did the student look you in the eye?

Assignment Sheet #15 — Evaluated to the satisfaction of the instructor
(NOTE: These criteria are suggestions for evaluating student responses.)

- A. Were the questions answered correctly?
- B. Did the student use a variety of information to answer the questions?

SHEEP BREEDS AND SELECTION
UNIT IV

TEST

NAME _____

SCORE _____

1. Match to their correct definitions terms associated with sheep breeds and selection. Write the correct numbers in the blanks.

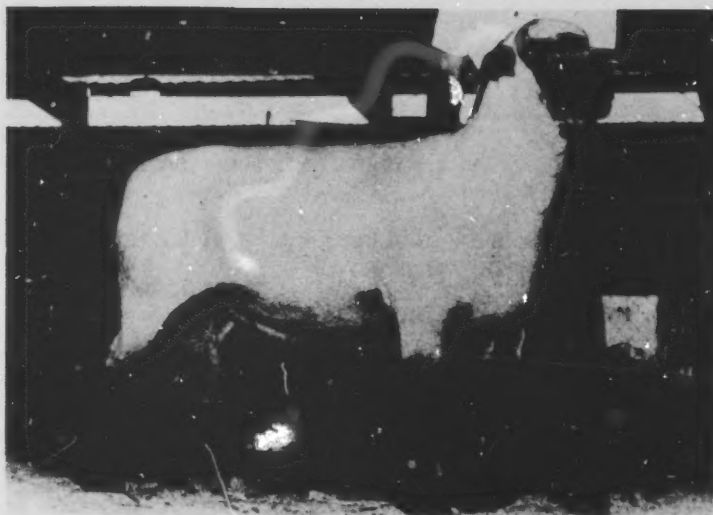
- | | | |
|----------|---|----------------|
| _____ a. | Animal whose ancestors are all of the same breed; may or may not be pedigreed | 1. Lamb |
| _____ b. | Breeds developed for wool production | 2. Ram |
| _____ c. | Male or female sheep under one year old | 3. Meat breeds |
| _____ d. | Mature male sheep | 4. Ewe |
| _____ e. | Breeds developed primarily for meat production, with little emphasis on wool production | 5. Wether |
| _____ f. | Castrated male sheep | 6. Wool breeds |
| _____ g. | Female sheep | 7. Purebred |

2. Identify the following major breeds of sheep. Write the correct names in the blanks.

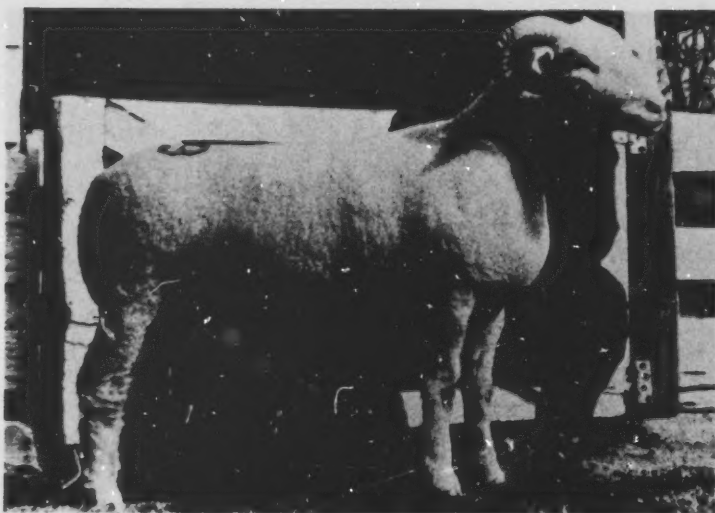


a. _____

TEST



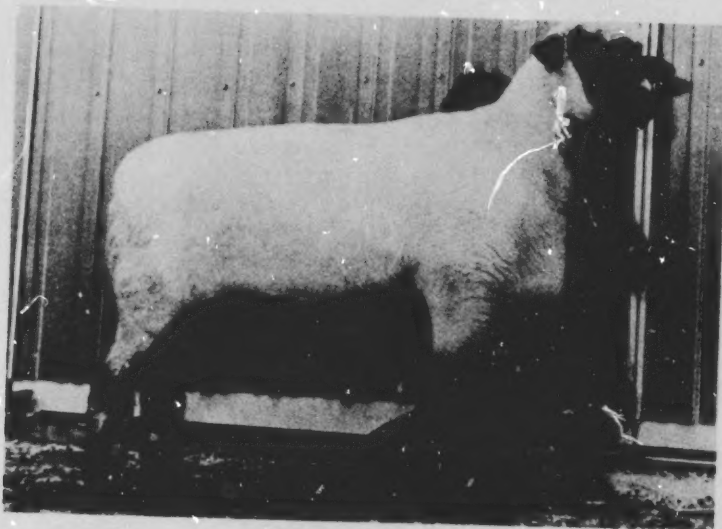
b. _____



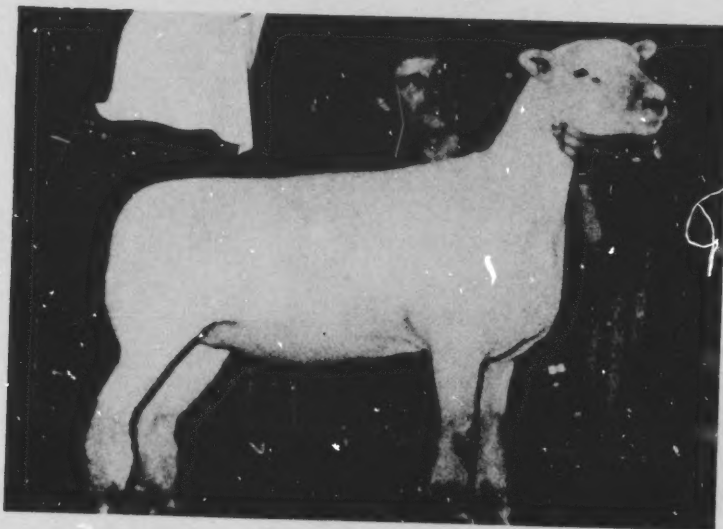
c. _____

767 A

TEST



d. _____



e. _____

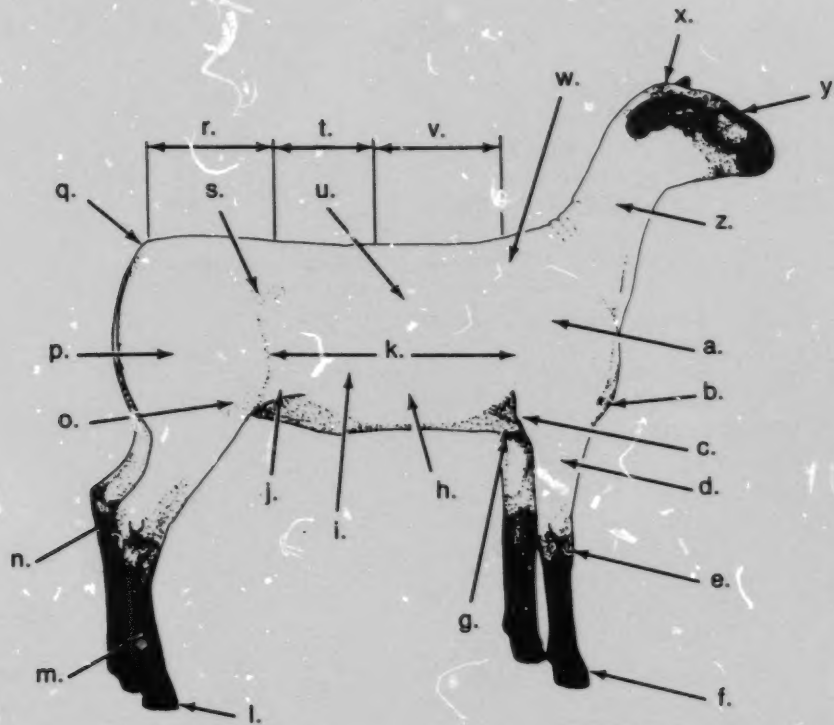
TEST



f. _____

TEST

3. Label the parts of the sheep illustrated below. Write the correct names in the corresponding blanks.



- | | | |
|----------|----------|----------|
| a. _____ | j. _____ | s. _____ |
| b. _____ | k. _____ | t. _____ |
| c. _____ | l. _____ | u. _____ |
| d. _____ | m. _____ | v. _____ |
| e. _____ | n. _____ | w. _____ |
| f. _____ | o. _____ | x. _____ |
| g. _____ | p. _____ | y. _____ |
| h. _____ | q. _____ | z. _____ |
| i. _____ | r. _____ | |

TEST

4. Select from the following list the characteristics of the ideal market lamb. Write an "X" in the blank before each correct answer.

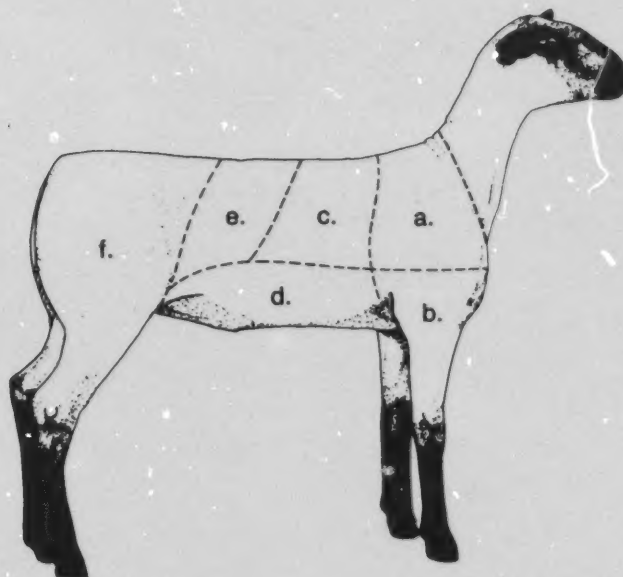
- ____a. Moderately long and tall
- ____b. Moderately muscled
- ____c. Correct finish of 0.3 to 0.4 inch over rib eye
- ____d. Long in loin and rump
- ____e. Clean and trim in neck and shoulder with tight skin
- ____f. Correct set of feet and legs
- ____g. Straight over top

5. List desirable characteristics of breeding sheep.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____

TEST

6. Label wholesale cuts of lamb with their proper names and desired percentages of total carcass yield. Write the correct names and percentages in the corresponding blanks.



a.	_____	___%	d.	_____	___%
b.	_____	___%	e.	_____	___%
c.	_____	___%	f.	_____	___%

7. Define *livestock judging*.

TEST

8. Match to their correct definitions terms associated with livestock judging. Write the correct numbers in the blanks.

_____a.	Correct on feet and legs	1. Balance
_____b.	Traits distinguishing a male from a female	2. Meatiness
_____c.	Having large bones and frame	3. Eye appeal
_____d.	General term commonly defined as a combination of characteristics that make an animal useful for a specific purpose	4. Trim
_____e.	Condition of having appropriate size and weight for age	5. Tight-framed
_____f.	Size of an animal as determined by skeletal structure	6. Sound
_____g.	Traits that distinguish one breed from another	7. Growthiness
_____h.	Traits distinguishing a female from a male	8. General appearance
_____i.	Free of excess finish or fat	9. Rugged
_____j.	High proportion of muscle volume in areas of high-priced cuts	10. Type
_____k.	Overall smoothness, blending of shoulders, and refinement of head and bone	11. Breed character
_____l.	Ability of an animal to "hold itself together" as indicated by strength of top, tightness of shoulders, and squareness of feet and leg placement	12. Femininity
_____m.	Impression relative to an ideal, gained from looking at sheep from a distance of 25 to 30 feet	13. Masculinity
_____n.	Blending of the parts	14. Scale
_____o.	Recognition that an animal has desirable traits, but that these traits are not acceptable to be used any higher in class	15. Quality
_____p.	Overall appearance of style, balance, and type in relation to an ideal	16. Gant

TEST

9. Select from the following list major factors to consider in judging breeding sheep. Write an "X" in the blank before each correct factor.

____a. General appearance
____b. Quality
____c. Fleece
____d. Size and weight as related to age
____e. Natural muscling
____f. Type

10. Select from the following list major factors to consider in judging market lambs. Write an "X" in the blank before each correct factor.

____a. Type
____b. Covering
____c. Quality
____d. Finish
____e. Sex
____f. Weight
____g. Dressing percent
____h. Muscle

11. Arrange in order the procedures to follow in handling sheep for judging. Write a "1" before the first step, a "2" before the second step, and so on.

____a. Check shoulder width and covering
____b. Check width and length of loin
____c. Check covering and strength of top from rump to top of shoulder
____d. Check depth of twist
____e. Check width and length of rump
____f. Check thickness of leg

TEST

12. List the areas of a lamb that have fat covering.

- a. _____
- b. _____
- c. _____

13. State the procedures for catching sheep.

- a. _____
- b. _____
- c. _____

14. State the procedures for holding sheep.

- a. _____
- b. _____

15. Distinguish between selected sheep-judging terms for desirable and undesirable traits. Write an "X" in the blank before each desirable term.

Market Sheep

- ____ a. The thickest, squarest-rumped lamb
- ____ b. A short-coupled lamb
- ____ c. A soft, spongy lamb
- ____ d. A firmer-finished lamb
- ____ e. Yield a heavier-muscled carcass
- ____ f. A carcass with a low percent of leg and loin
- ____ g. Yield a trimmer, higher-cutability carcass
- ____ h. A heavy-fronted, coarse-shouldered lamb
- ____ i. Plain-headed lamb

Breeding Sheep

- ____ a. A small, early-maturing ewe
- ____ b. More open-faced
- ____ c. A narrow-made, tight-ribbed ewe
- ____ d. A bigger-volumed ewe with more total capacity
- ____ e. A deeper, wider-chested ewe, indicating more substance and volume

TEST

16. State the purpose of the FFA placing card.

17. Compute placing scores by working the following problems. Show your work.

- a. You judged a class of Suffolk ewes. The official placings were 3 - 1 - 4 - 2 with cuts of 4, 4, 5. You placed the class 4 - 2 - 1 - 3. What is your score?

Your score = _____

- b. You judged a class of market lambs. The official placings were 1 - 2 - 4 - 3 with cuts of 5, 5, 5. You placed the class 1 - 2 - 3 - 4. What is your score?

You score = _____

TEST

18. State the purpose of giving reasons for placings.

19. Arrange in order the steps to follow in taking notes for oral reasons for placings. Write a "1" in the blank before the first step, a "2" before the second step, and so on.

- ____a. Write your placing at the top of the page
- ____b. Take notes on each animal to identify strong points and criticisms of each
- ____c. Identify the class
- ____d. Write the numbers 1 through 4 down the side of the page, leaving approximately three lines between the numbers
- ____e. Take notes by pairs, giving advantages as well as grants

20. Select from the following list techniques for presenting oral reasons for placings. Write an "X" in the blank before each correct answer.

- ____a. Speak with a clear, powerful voice
- ____b. Use five terms in succession
- ____c. Carry notes into reason room
- ____d. Open reasons with a precise opening statement
- ____e. Use more than two minutes to give reasons
- ____f. Stand approximately 4 to 8 feet away from reason-taker
- ____g. Avoid body movement
- ____h. Look reason-taker squarely in the eye
- ____i. Talk in a firm voice
- ____j. Use identification characteristics whenever possible to let the reason-taker know that you saw the class
- ____k. Stand erect, with feet and shoulders aligned
- ____l. Conclude your reasons with, "For these reasons I placed this class . . ."
- ____m. Use good voice control, both in speed and volume

TEST

- _____n. Present reason-taker with an accurate picture of the animal
- 21. Arrange in order steps to follow in presenting oral reasons for placings. Write a "1" before the first step, a "2" before the second step, and so on.
 - _____a. Discuss top pair
 - _____b. Make opening remarks
 - _____c. Discuss middle pair
 - _____d. Discuss bottom pair

(NOTE: Test questions 22-31 list the assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

- 22. Evaluate characteristics of a ewe.
- 23. Evaluate characteristics of a ram.
- 24. Evaluate market lambs.
- 25. Use FFA placing cards.
- 26. Evaluate a set of written reasons for placing a class of sheep.
- 27. Judge a class of market lambs.
- 28. Judge a class of breeding sheep.
- 29. Write a set of reasons for placing a class of sheep.
- 30. Give a set of oral reasons for placing a class of sheep.
- 31. Use resource materials to locate information about sheep breeds.

SHEEP BREEDS AND SELECTION
UNIT IV

ANSWERS TO TEST

- | | | | | |
|----|----|-------------|----|-----------------|
| 1. | a. | 7 | e. | 3 |
| | b. | 6 | f. | 5 |
| | c. | 1 | g. | 4 |
| | d. | 2 | | |
| 2. | a. | Suffolk | d. | Shropshire |
| | b. | Hampshire | e. | Southdown |
| | c. | Dorset | f. | Rambouillet |
| 3. | a. | Shoulder | n. | Hock |
| | b. | Breast | o. | Stifle |
| | c. | Elbow | p. | Leg of lamb |
| | d. | Foreshank | q. | Dock |
| | e. | Knee | r. | Rump |
| | f. | Pastern | s. | Hip |
| | g. | Foreflank | t. | Loin |
| | h. | Belly | u. | Ribs |
| | i. | Last rib | v. | Back or rack |
| | j. | Rear flank | w. | Top of shoulder |
| | k. | Body | x. | Poll |
| | l. | Hoof | y. | Face |
| | m. | Cannon bone | z. | Neck |

ANSWERS TO TEST

4. a, d, e, f, g

5. a. Moderately long and tall
 b. Thick in muscling
 c. Straight over top
 d. Good on feet and legs
 e. Typical head of breed and sex
 f. Fleece relatively free of black or dark wool

6. a. Shoulder 25%
 b. Shank 4%
 c. Rack 13%
 d. Flank and breast 14%
 e. Loin 11%
 f. Leg (Sirloin on) 33%

7. Analyzing carefully an animal's individual traits and comparing those traits to an ideal animal or standard

- | | | | |
|---------|-------|-------|-------|
| 8. a. 6 | e. 7 | i. 4 | m. 8 |
| b. 13 | f. 14 | j. 2 | n. 1 |
| c. 9 | g. 11 | k. 15 | o. 16 |
| d. 10 | h. 12 | l. 5 | p. 3 |

9. a, b, c, d, e, f

10. a, d, g, h

ANSWERS TO TEST

11. a. 2 d. 6
b. 3 e. 5
c. 1 f. 4
12. a. Ribs
b. Back
c. Loin
13. a. Confine animal in small area
b. Move quietly toward animal
c. Swiftly grasp rear flank with your hand
14. a. Grasp fold of flesh under lower jaw firmly with left hand
b. Place right hand securely over dock
15. **Market Sheep**
a, d, e, g
Breeding Sheep
b, d, e
16. Identifying the judge and recording the placing
17. a. 12
b. 45
18. Presenting your opinion and justification for placing a class of livestock
19. a. 2 d. 3
b. 4 e. 5
c. 1

ANSWERS TO TEST

- 20. a, d, f, g, h, i, j, k, m, n
- 21. a. 2
b. 1
c. 3
d. 4
- 22. Evaluated to the satisfaction of the instructor
- 23. Evaluated to the satisfaction of the instructor
- 24. Evaluated to the satisfaction of the instructor
- 25. Evaluated to the satisfaction of the instructor
- 26. Evaluated to the satisfaction of the instructor
- 27. Evaluated to the satisfaction of the instructor
- 28. Evaluated to the satisfaction of the instructor
- 29. Evaluated to the satisfaction of the instructor
- 30. Evaluated to the satisfaction of the instructor
- 31. Evaluated to the satisfaction of the instructor

**DAIRY BREEDS AND SELECTION
UNIT V****UNIT OBJECTIVE**

After completing this unit, the student should be able to identify dairy breeds, and to select breeds according to type and characteristics. The student should be able to judge dairy cattle and give a set of oral reasons for placings. The student will show this knowledge by completing the assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with dairy cattle breeds and selection.
2. Identify major breeds of dairy cattle.
3. Label the parts of a dairy cow.
4. Match breeds of dairy cattle to their yearly production averages.
5. Define *dairy judging*.
6. Match terms associated with dairy cattle judging to their correct definitions.
7. Distinguish between dairy cattle judging terms for desirable and undesirable traits.
8. List traits classified by the dairy-type evaluation system.
9. Select from a list factors to consider in selecting dairy cattle.
10. Explain the purpose of the Dairy Cow Unified Score Card.
11. State the purpose of the FFA placing card.
12. Compute placing scores.
13. State the purpose of giving reasons for placings.
14. Arrange in order steps to follow in taking notes for oral reasons for placings.
15. Select from a list techniques for presenting oral reasons for placings.
16. Arrange in order steps to follow in presenting oral reasons for placings.

OBJECTIVE SHEET

17. Use the dairy-type evaluation system.
18. Evaluate animals, using the Dairy Cow Unified Score Card criteria.
19. Judge classes of cows, using point system from Dairy Cow Unified Score Card.
20. Evaluate a set of written reasons for placing a class of dairy cattle.
21. Judge a production class of dairy cattle.
22. Judge an open heifer class of dairy cattle.
23. Write a set of reasons for placing a class of dairy cattle.
24. Give a set of oral reasons for placing a class of dairy cattle.
25. Use resource materials to locate information about a breed of dairy cattle.

DAIRY BREEDS AND SELECTION
UNIT V

SUGGESTED ACTIVITIES

- I. Unit contents
 - A. Objective sheet
 - B. Suggested activities
 - C. Transparency masters
 - 1. TM #1 — Dairy Wedge (Side View)
 - 2. TM #2 — Dairy Wedge (Top View)
 - 3. TM #3 — Dairy Wedge (Rear View)
 - 4. TM #4 — Parts of a Dairy Cow
 - 5. TM #5 — General Appearance of a Dairy Cow
 - 6. TM #6 — Dairy Character
 - 7. TM #7 — Body Capacity
 - D. Information sheet
 - E. Assignment sheets
 - 1. Assignment Sheet #1 — Identify Major Breeds of Dairy Cattle
 - 2. Assignment Sheet #2 — Label the Parts of a Dairy Cow
 - 3. Assignment Sheet #3 — Use Dairy Judging Terms
 - 4. Assignment Sheet #4 — Use the Dairy-Type Evaluation System
 - 5. Assignment Sheet #5 — Evaluate Animals, Using the Dairy Cow Unified Score Card Criteria
 - 6. Assignment Sheet #6 — Judge Classes of Cows, Using Point System from Dairy Cow Unified Score Card
 - 7. Assignment Sheet #7 — Use FFA Placing Cards

SUGGESTED ACTIVITIES

8. Assignment Sheet #8 — Compute Placing Scores
 9. Assignment Sheet #9 — Evaluate a Set of Written Reasons for Placing a Class of Dairy Cattle
 10. Assignment Sheet #10 — Judge a Production Class of Dairy Cattle
 11. Assignment Sheet #11 — Judge an Open Heifer Class of Dairy Cattle
 12. Assignment Sheet #12 — Write a Set of Reasons for Placing a Class of Dairy Cattle
 13. Assignment Sheet #13 — Give a Set of Oral Reasons for Placing a Class of Dairy Cattle
 14. Assignment Sheet #14 — Use Resource Materials to Locate Information About a Breed of Dairy Cattle
- F. Answers to assignment sheets
- G. Test
- H. Answers to test
- II. Instructor's guide
- A. Obtain materials to supplement unit.
1. Books
 - a. *Dairy Cattle Judging*. Order from Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma 74078.
 - b. *Dairy Production*. Diggins, Ronald V., Clarence E. Bundy, and Virgil W. Christensen. Available from Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 07632.
 - c. *Judging Livestock, Dairy Cattle, Poultry, and Crops*. Available from Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 07632.
 - d. *Modern Breeds of Livestock*. Available from Macmillan Publishing Company, Inc., 866 Third Avenue, New York, New York 10022.

(NOTE: Order at least five copies to be used by the students while doing breed research.)

SUGGESTED ACTIVITIES

2. Breed promotional material

(NOTE: Each of the breed associations offers free training materials. The material can be ordered from the addresses below.)

- a. American Guernsey Cattle Club
2105J South Hamilton Road, Box 27410
Columbus, Ohio 43227
Bernard M. Heisner, Executive Secretary
(614)864-2409
Breed Publication: *The Guernsey Breeders Journal*
- b. American Jersey Cattle Club
Box 27310
Columbus, Ohio 43227
J.F. Cavanaugh, Executive Secretary
(614)861-3636
Breed Publication: *The Jersey Journal*
- c. Ayrshire Breeders Association
2 Union Street
Brandon, Vermont 05733
Peter B. Davis, Executive Secretary
(802)247-5774
Breed Publication: *The Ayrshire Digest*
- d. Brown Swiss Cattle Breeders Association of U.S.A.
Box 1038, 800 Pleasant Street
Beloit, Wisconsin 53511-1038
George W. Opperman, Executive Secretary
(608)365-4474
Breed Publication: *The Brown Swiss Bulletin*
- e. Holstein-Friesian Association of America
1 South Main Street, Box 808
Brattleboro, Vermont 05301
Zane V. Atkins, Executive Secretary
(802)254-4551
Breed Publication: *The Holstein World*

3. Slides

- a. *Livestock Breeds*. 42 slides. Available for purchase from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.
- b. *1982 Holstein Judging* slide and reason program. 75 slides in full color with 24-minute tape. 12 classes of 48 Holsteins (4 heifer and 8 cow classes). Reasons by 12 outstanding youth. Available for purchase from Agri Graphics, Cary, Illinois 60013, (312)639-5723.

SUGGESTED ACTIVITIES

- c. *1982 Colored Breeds Judging* slide and reason program. 93 slides in full color, 27 minutes of tape, 15 classes of 60 animals (3 classes each of Ayrshire, Brown Swiss, Guernsey, Jersey, and Milking Shorthorn). Each breed has a heifer class, two-year-old class, and an older cow class. Reasons by 12 outstanding youth. Available for purchase from Agri Graphics Cary, Illinois 60013, (312)339-5723.
- d. *The Money-Making Cow*. Outlines principles and strategies of cow selection and evaluation. Set comes with a script and runs for 15 minutes. Available for loan from Midwest Breeder's Cooperative, David M. Wilhelms, Box 469, Shawano, Wisconsin 54166, (715)526-2141.
- e. *Judging the Dairy Cow*. 86 slides, 8 classes. Available for purchase from Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.

- 4. *Hoard's Dairyman Cow Judging Contest*. Write Contest Department, Hoard's Dairyman, Fort Atkinson, Wisconsin 53538.

(NOTE: It is recommended that you order one copy of the contest for each student in your class.)

- 5. Flashcards — "Judging Dairy Cattle." Available for purchase from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.
- 6. Pamphlet — "Dairy Type Evaluation System" by Wilson R. Douglas. Available from W.D. Hoard & Sons Company, Fort Atkinson, Wisconsin 53538.

(NOTE: Order enough for each student enrolled in your vocational agriculture class.)

- 7. FFA placing cards. Order from Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.
- 8. Stenography notebooks. Purchase one of these 6-by-9-inch books for each class member. Use the books when teaching students to take notes for giving reasons.

SUGGESTED ACTIVITIES

9. Film — *The Big Brown Cow*. 16 mm, color, 27 minutes. The film depicts the many merits of the breed. Available for loan from the Brown Swiss Cattle Breeders Association of U.S.A., P.O. Box 1038, Beloit, Wisconsin 53511.

- B. Make or obtain transparencies.

(NOTE: Transparencies are available for purchase from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)

- C. Introduce unit by helping students focus on the importance of Oklahoma's dairy industry.

SUGGESTIONS:

- Tell students that dairy production in Oklahoma contributed 170 million dollars to our economy in 1982.
- Ask students to estimate average per capita consumption of milk products. The consumption was 562 pounds per capita in 1982.
- Tell students that Oklahoma exports some milk products each year. Use this information to point out that Oklahoma is considered a production state.
- Ask students to identify commercial and purebred dairy producers in the community.
- Have students price a gallon of milk in the supermarket to demonstrate that the farmer is not the cause for high-priced milk. A gallon of milk weighs 8.6 pounds. There are 11.6 gallons of milk in 100 pounds ($100 \div 8.6 = 11.6$). In 1983, the price of milk in a supermarket was \$2.30 per gallon. A hundredweight of unprocessed milk had a value of \$26.68 ($\$2.30/\text{gal.} \times 11.6 \text{ gal.} = \$26.68$). Processing costs total \$14.68, leaving the farmer only \$12.00 per hundredweight of milk. The farmer must pay transportation costs from that \$12.00 per hundredweight.

- D. Provide students with objective sheet.
- E. Discuss unit and specific objectives.
- F. Provide students with information and assignment sheets.

SUGGESTED ACTIVITIES

G. Discuss information and assignment sheets.

(NOTE: This unit contains fourteen assignment sheets. It is recommended to use the assignment sheets in sequence.)

1. Make the terms in Section I of the Information Sheet meaningful by illustrating the meaning of each term as the term is presented.

SUGGESTIONS:

- Use photographs received from the different breed associations to discuss terms related to breed characteristics, dairy character, body capacity, and mammary system.
- Use photographs to help students develop a meaning of terms such as *heifer*, *springer*, *cow*, *calf*, and *bull*.
- Have students who own dairy cattle bring registration papers to class. Use the papers to help students understand the meaning of pedigree.
- Use Transparencies #1 through #3 to help students learn the meaning of dairy wedge.

2. Use Section II of the Information Sheet to help students learn to identify breeds of dairy cattle. Have students complete Assignment Sheet #1.

SUGGESTIONS:

- Introduce students to Assignment Sheet #14. This assignment sheet uses reference materials to study different breeds of dairy cattle. Review questions with students. Help students locate reference materials and establish a date that the assignment sheet should be completed.
- Show slides, *Livestock Breeds* and discuss breed characteristics. Stress color patterns as well as body and head characteristics.
- Have students collect pictures of cows from dairy magazines and journals and paste pictures on construction paper. These pictures can be used at a later time when the students start evaluating cows.
- Develop a bulletin board of the different breeds using pictures collected by students and received from breed associations.

SUGGESTED ACTIVITIES

3. Use Information Sheet, Section III and Transparency #4 to help students learn to identify parts of the dairy cow. Have students complete Assignment Sheet #2.

SUGGESTIONS:

- Stress the importance of calling the parts by their correct names. Tell students that they will have to use correct names of the parts when writing and giving oral reasons for placings.
 - Tell students that the back of the cow is divided into three parts: loin, chine, and rump. Illustrate the location of these parts by using Transparency #4.
4. Use Information Sheet, Section IV to help students develop meaning of production traits.

SUGGESTIONS:

- Point out the importance of milking cows that produce large quantities. The Holstein breed is known for producing large quantities of milk. In 1982 this breed represented 90% of the total cows in production within the United States.
 - Explain the importance of butterfat in marketing milk. Milk must be 3.5% butterfat to get the going price. Butterfat over 3.5% is given a higher price and under 3.5% is reduced in price.
 - Call Oklahoma Associated Milk Producers, Incorporated (AMPI) to get current market information for price of milk. Their phone number is (405) 427-6581.
5. Use Section V of the Information Sheet to stress the importance of learning to judge dairy cattle.

SUGGESTIONS:

- Show the slide set *The Money-Making Cow*. The script outlines principles and strategies of cow selection and evaluation.
- Show students a class of dairy cows from the Hoard's dairy judging contest. Tell students that they will be able to enter the contest during the school year. The contest ends in February of each year.
- Ask a junior or senior vocational agriculture student to talk to students about dairy judging and to state personal benefits received from dairy judging.
- Invite a dairy producer to talk to the class about his or her operation and how judging skills are used in that operation.

SUGGESTED ACTIVITIES

6. Use Section VI of the Information Sheet to help students learn to use terms used in judging and selecting dairy cattle.

SUGGESTIONS:

- Help students understand the meaning of each term as it is presented. Use Transparency #6 to illustrate the meanings of the terms.
 - Use pictures on a bulletin board to add further clarity and meaning to judging terms.
7. Use Section VII of Information Sheet and Assignment Sheet #3 to assist students in using desirable and undesirable terms needed to judge dairy cattle.

SUGGESTIONS:

- Assign the class to read *Dairy Cattle Judging*.
 - Illustrate how to use the terms when evaluating an individual animal and when making comparisons.
 - Show students how to tie terms into phrases. For example, "a larger cow with more size and scale."
8. Use Section VIII of Information Sheet and Assignment Sheet #4 to help students learn to evaluate cows, using the dairy-type evaluation system.

SUGGESTIONS:

- Explain to students why the system was developed and how the system works. Tell students the system has thirteen traits and each animal is evaluated on an individual basis on all thirteen traits.
- Have students evaluate the dairy cattle in the pictures they collected from the breed journals and magazines, using the dairy-type evaluation system.
- Give each student a copy of the dairy-type evaluation system.

SUGGESTED ACTIVITIES

9. Use Section IX of the Information Sheet and Transparencies #5 through #7 to help students use factors in selecting dairy cattle.

SUGGESTIONS:

- Help students learn to read the Dairy Cow Unified Score Card. Relate the four main points of the card to dairy cattle selection.
 - Use Transparency #5 to point out good general appearance. Tell students that a good cow should be attractive, stylish, and big enough to produce large quantities of milk.
 - Use Transparency #6 to talk about dairy character. Illustrate such points as the neck. The neck should be long, lean, and blend into the shoulder smoothly. The throat should be clean cut. Thumb rule for length of neck: *one-half the length of the back*. Talk about the withers and the ribs. The flanks should be deep and refined. Thighs should be flat, and the skin should be loose.
 - Use Transparency #7 to illustrate body capacity. Tell students that the cows must be big enough to consume a lot of feed for conversion into milk. Tell students that the barrel should be long, deep, and wide.
 - Help students evaluate mammary systems. The mammary system must be strong and large enough to produce and store milk. Tell students that a big udder is not always desirable. The age of the cow has a lot to do with the udder. Cows from two to three years of age must not have a loose udder. Any udder that hangs below the hock is classified as a loose udder. Some looseness can be accepted after a cow reaches four years of age. Teats should be evenly spaced on each quarter and point slightly in with a strong, prominent crease down the center. Tell students that the udder attachment should be wide and high in the back and that the udder should extend well forward.
10. Use Section X of the Information Sheet to explain the Dairy Cow Unified Score Card. Have students complete Assignment Sheets #5 and #6.

SUGGESTIONS:

- Point out the four major parts of the score card. Explain the scoring system.
- Tell students that each individual cow is evaluated on each of the four parts of the score card.

SUGGESTED ACTIVITIES

11. Combine Sections XI and XII of the Information Sheet and Assignment Sheets #7 and #8 to help students learn to use FFA placing cards and to compute placing scores.

SUGGESTIONS:

- Have students look at a placing card and tell the student how the card is used. Explain its purpose and tell how to fill out the card correctly.
 - Write an example on the chalkboard, and have the students place the example on the card. Have students mark a placing of 2 - 4 - 3 - 1. Use an official placing of 4 - 3 - 1 - 2 with cuts of 4, 3, 2. Use chalkboard to show students how to compute placing scores.
12. Combine Information Sheet, Sections XIII and XIV to teach the purpose of giving reasons for placings and how to take notes for their reasons. Have students complete Assignment Sheets #9 through #11.

SUGGESTIONS:

- Tape-record the reasons for placings given in Assignment Sheet #9, then play them back to the class. This activity will give the students an example of how reasons should be given and how desirable and undesirable terms are used.
- Distribute stenography notebooks to class. Put an example of a set of notes on the chalkboard and have students copy the notes into their notebooks. Show students how to use abbreviations when taking notes.
- Tell students to read Chapter 8 in *Judging Livestock, Dairy Cattle, Poultry, and Crops* by Youtz.
- Use the set of "Judging Dairy Cattle" flashcards to set up a class for students to judge in Assignment Sheet #10. Have students take notes on the class. Evaluate notes, make suggestions for improvement, and have students rewrite the notes as needed.
- Use 1982 Holstein Judging slides and/or 1982 Colored Breeds Judging slides to set up the classes. Remind the students to judge each animal in the class, using the factors from the Dairy Cow Unified Score Card.

SUGGESTED ACTIVITIES

- Have students set up a box like the following for each class:

	1	2	3	4
GA35				
DC20				
BC10				
U35				

13. Combine Assignment Sheets #10 through #12 and have students practice their dairy judging skills.

SUGGESTIONS:

- Have junior and senior vocational agriculture students put together one class of heifers and one class of producing cows for students to judge.
 - Inform students that they must take notes on the class and be responsible for writing a set of reasons for their placings on the classes.
 - Have students use their notes from Assignment Sheet #10 or #11 to write a set of reasons for Assignment Sheet #12.
14. Combine Sections XV and XVI of the Information Sheet and Assignment Sheet #13 to help students present oral reasons for placings.

SUGGESTIONS:

- Ask a junior or senior vocational agriculture student to give a set of oral reasons to the class. Have students listen to the reasons and evaluate the presentation using points contained in Sections XV and XVI of the Information Sheet.
 - Play a set of reasons tape selected from the *1982 Holstein Judging* slide and reason program or from the *1982 Colored Breeds Judging* slide and reason program.
 - Stress the importance of giving reasons and how it helps the student with public speaking.
 - Use junior and senior vocational agriculture students as reason-takers and have the students give a set of oral reasons.
15. Collect and discuss Assignment Sheet #14.

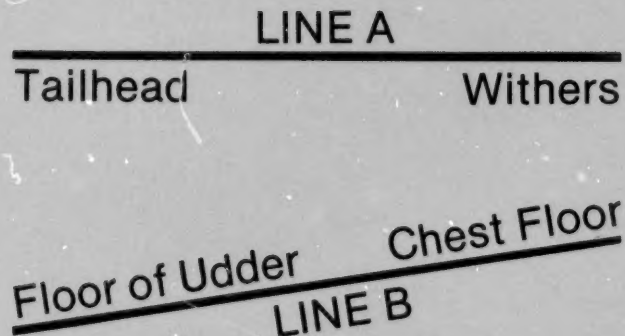
- H. Give test.

SUGGESTED ACTIVITIES

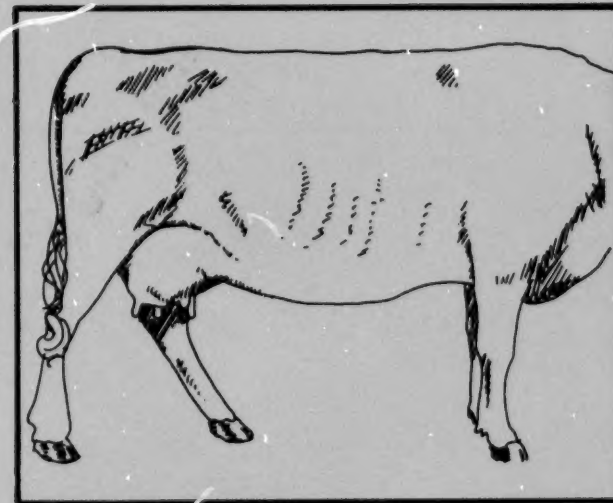
III. Unit references

- A. Briggs, Hilton M., and Dinus M. Briggs. *Modern Breeds of Livestock*. New York, Macmillan Publishing Company, Inc., 1980.
- B. Burton, Clifford. *Dairy Cattle Judging*. Stillwater, Oklahoma: Oklahoma State University, Cooperative Extension Service, 1975.
- C. Diggins, Ronald V., Clarence E. Bundy, and Virgil W. Christensen. *Dairy Production*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1979.
- D. Wilson, R. Douglas. "A New System of Dairy Type Evaluation." *Hoard's Dairyman*, December, 1979.
- E. Youtz, H.G., and A.C. Carlson. *Judging Livestock, Dairy Cattle, Poultry, and Crops*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1962.

Dairy Wedge (Side View)

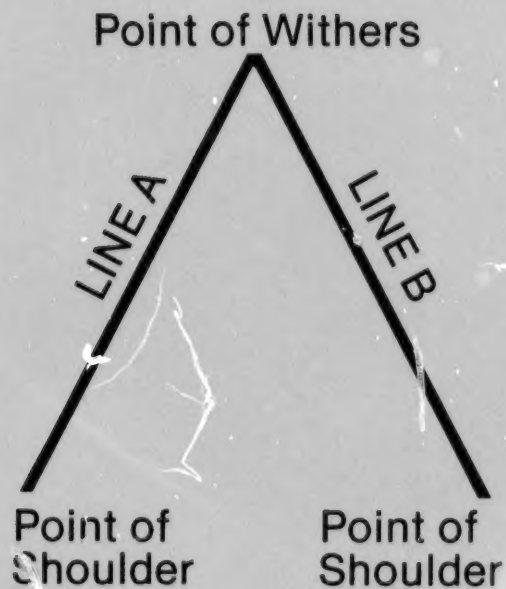


(NOTE: If you add to the triangle, you do not hurt the cow; but if you take away from the triangle, you are hurting the cow and shortening her life span and her span of production.)



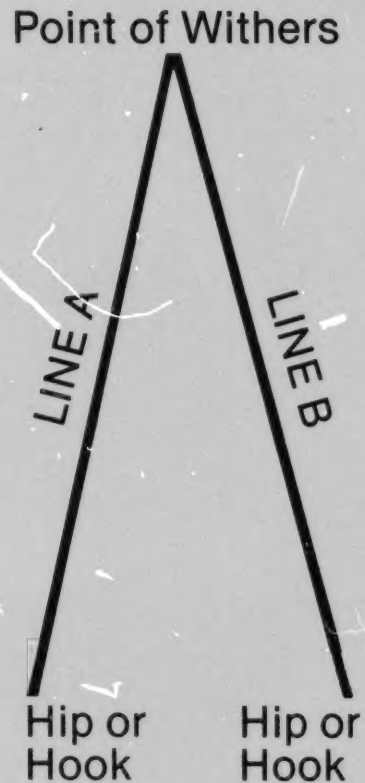
From *Judging Livestock, Dairy Cattle, Poultry, and Crops*, by H. G. Youtz and A. C. Carlson. Reprinted with permission of the publisher, Prentice-Hall, Inc.

Dairy Wedge (Top View)



From *Judging Livestock, Dairy Cattle, Poultry, and Crops*, by H. G. Youtz and A. C. Carlson. Reprinted with permission of the publisher, Prentice-Hall, Inc.

Dairy Wedge (Rear View)

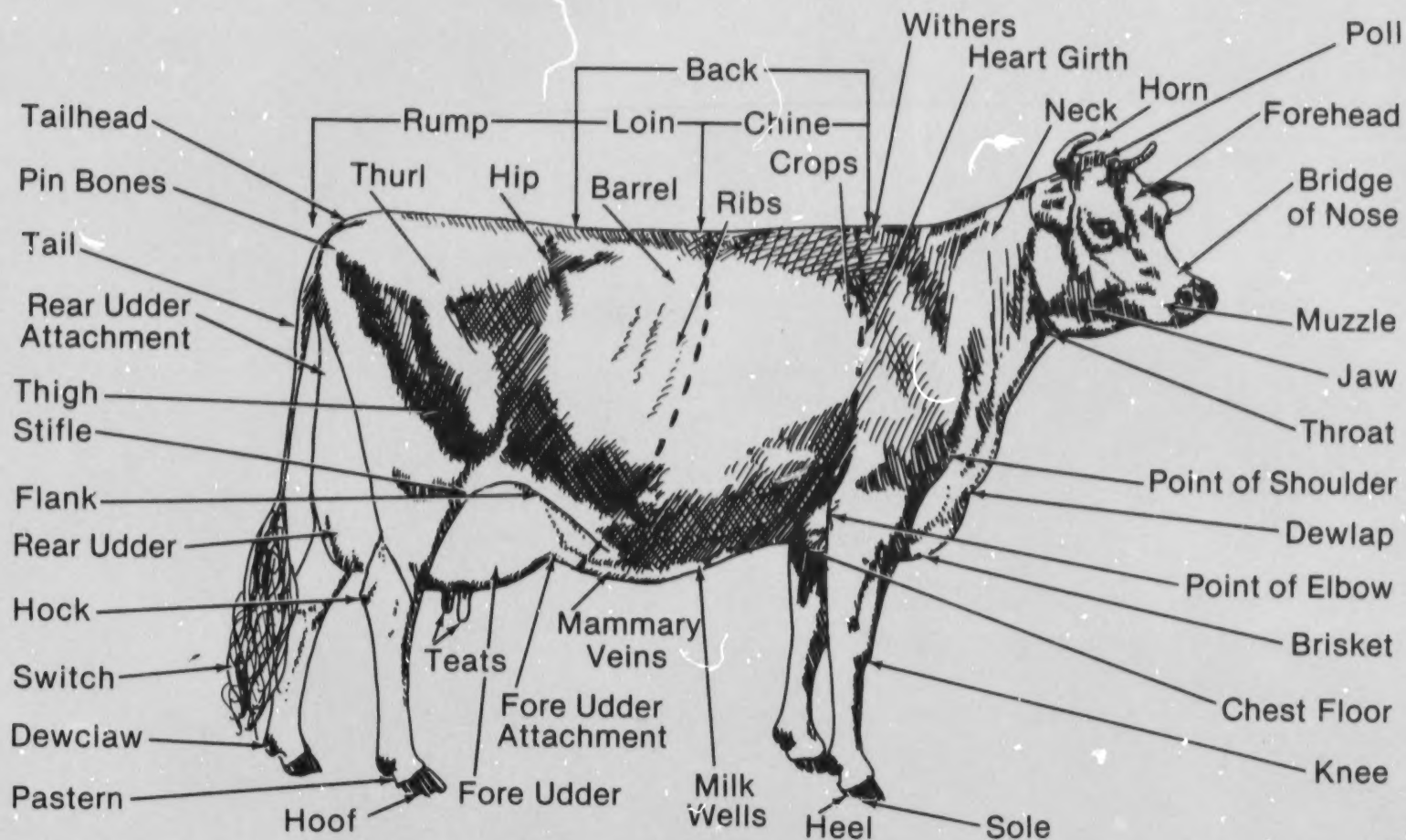


From *Judging Livestock, Dairy Cattle, Poultry, and Crops*, by H. G. Youtz and A. C. Carlson. Reprinted with permission of the publisher, Prentice-Hall, Inc.

801

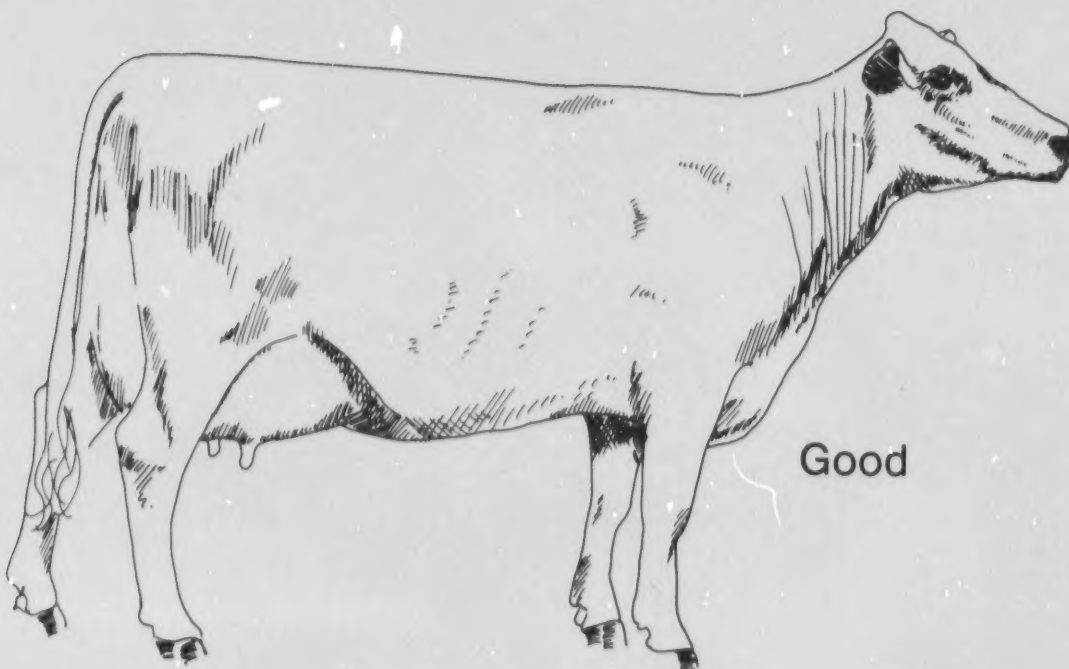
800

Parts of a Dairy Cow

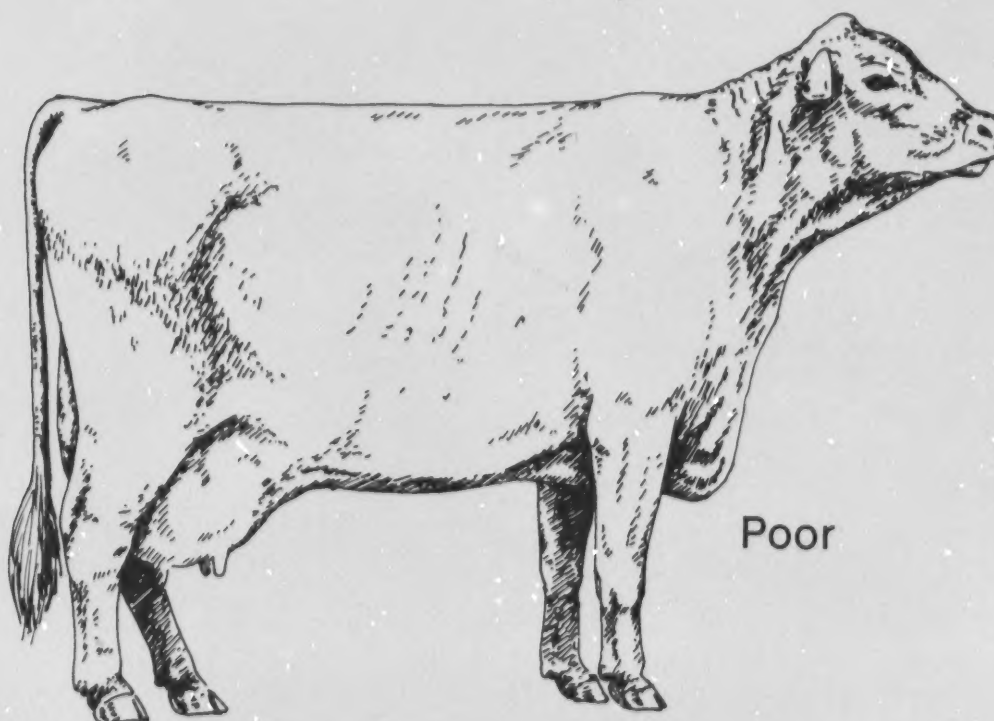


Used with permission of the American Jersey Cattle Club, Columbus, Ohio.

General Appearance of a Dairy Cow

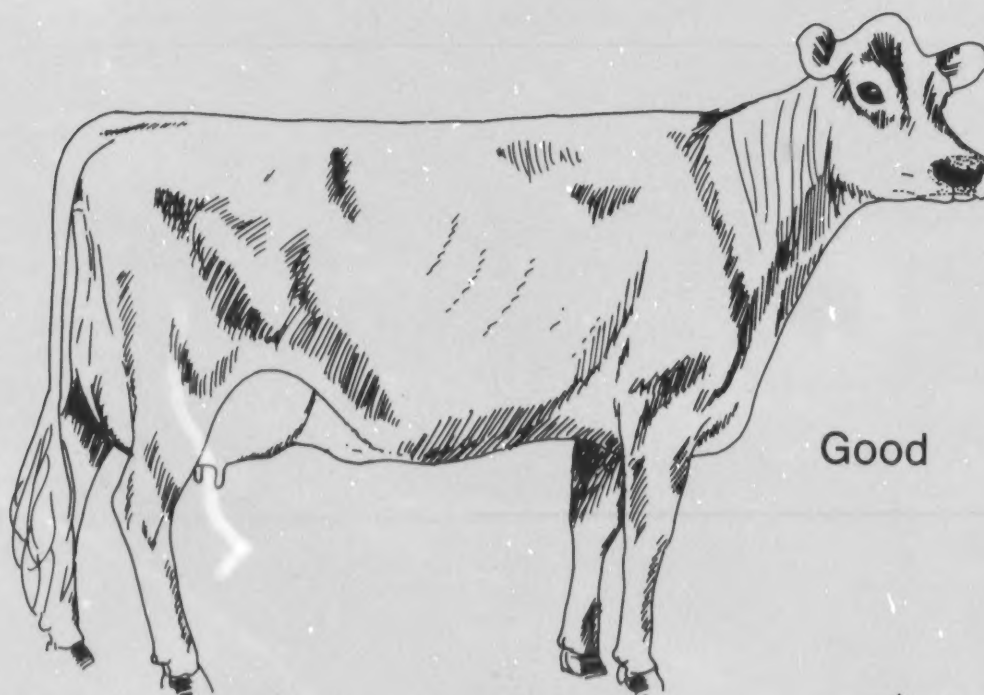


Good



Poor

Dairy Character



Good



Poor

Lower illustration used with permission of the Idaho State Board for Vocational Education.

Body Capacity



Good



Poor



Good



Poor



Good



Poor

Used with permission of the Idaho State Board for Vocational Education.

DAIRY BREEDS AND SELECTION
UNIT V

INFORMATION SHEET

I. Terms and definitions

- A. Cow — Mature female dairy animal; shows evidence of having produced one or more calves
- B. Heifer — Female dairy animal that has not borne an offspring
- C. Springer — Cow showing signs of pregnancy
- D. Bull — Mature male dairy animal
- E. Calf — Male or female dairy animal under one year of age
- F. Lactation period — Span of time that a cow is giving milk
- G. Milk production — Amount in pounds of milk that a cow produces during a lactation period
- H. Butterfat — Percent of fat in the milk
- I. Disposition — Manner in which an animal acts
EXAMPLES: Quiet, docile, vicious
- J. Dairy herd improvement (DHI) records — Production records kept on producing dairy cattle
- K. Pedigree — Register of lines of ancestors
- L. Disqualification — Statement that means that the animal cannot be registered, or in the show ring, is not eligible to win a prize
- M. Discrimination — Defect that is undesirable
- N. Dairy wedge — Lines of the dairy cow's body
- O. Breed characteristics — Physical traits that differentiate one breed from another
- P. Dairy character — Combination of characteristics that indicate a cow's ability to convert feed to milk
- Q. Body capacity — Size of barrel and heart girth indicating an animal's ability to consume large amounts of feed
- R. Mammary system — Parts of the cow directly responsible for producing and storing milk

INFORMATION SHEET

II. Breeds of dairy cattle (Figures 1-5)

A. Holstein

FIGURE 1



Courtesy: Holstein-Friesian Association of America, Brattleboro, Vermont.

B. Jersey

FIGURE 2

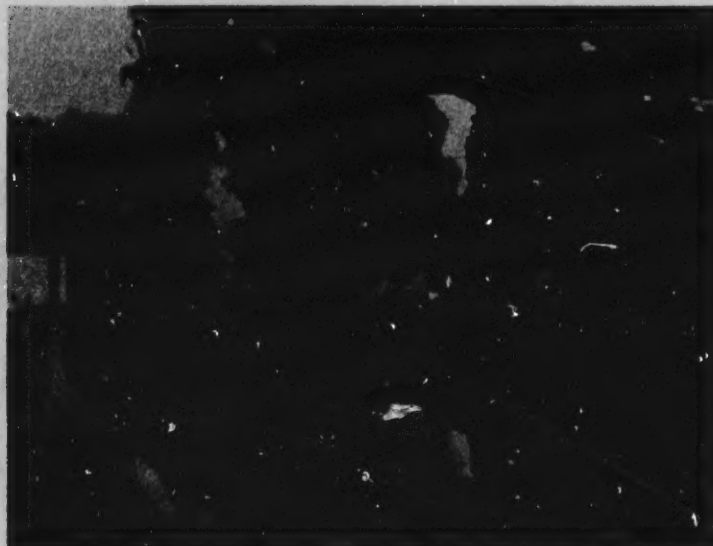


Courtesy: American Jersey Cattle Club, Columbus, Ohio.

INFORMATION SHEET

C. Guernsey

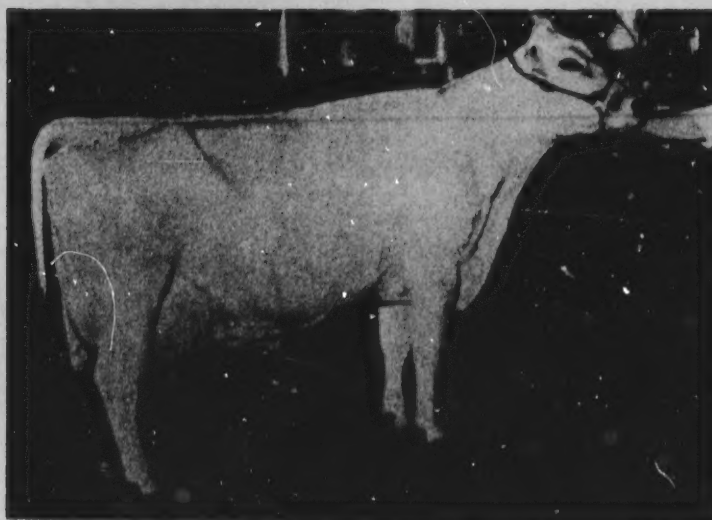
FIGURE 3



Courtesy: American Guernsey Cattle Club, Columbus, Ohio.

D. Brown Swiss

FIGURE 4



Courtesy: Brown Swiss Cattle Breeders Association of the United States of America, Beloit, Wisconsin.

INFORMATION SHEET

E. Ayrshire

FIGURE 5

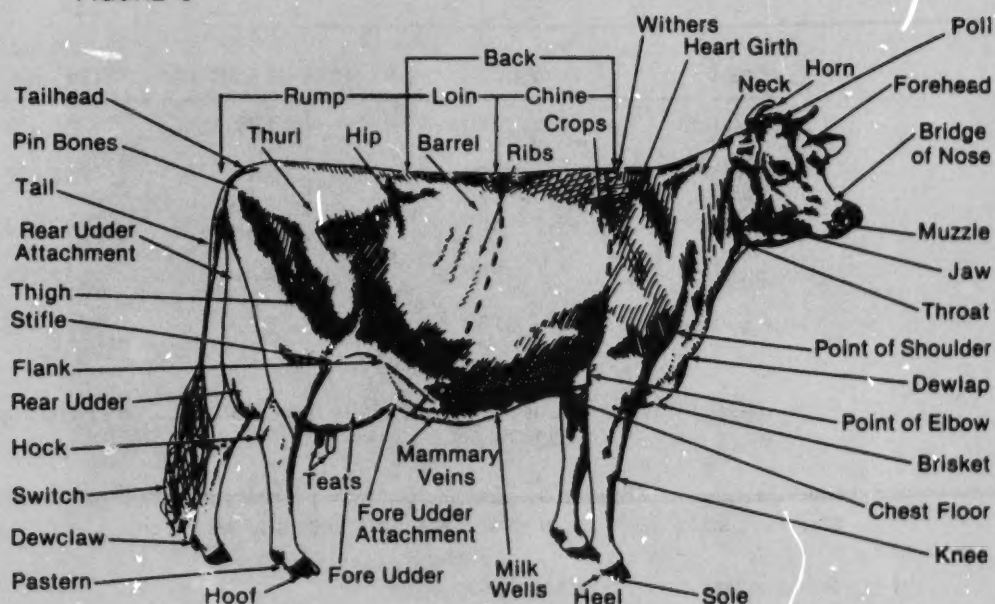


Courtesy: Ayrshire Breeders Association, Brandon, Vermont.

INFORMATION SHEET

III. Parts of dairy cow (Figure 6)

FIGURE 6



Used with permission of the American Jersey Cattle Club, Columbus, Ohio.

IV. Breeds of dairy cattle and their yearly production averages

A. National (Table 1)

TABLE 1

Breed	Percent Butterfat	Pounds Butterfat	Pounds Milk Production
Holstein	3.67	560	15,233
Ayrshire	3.93	477	12,119
Jersey	4.87	517	10,589
Brown Swiss	4.09	515	12,607
Guernsey	4.66	518	11,105

(NOTE: This information was taken from National Cooperative Dairy Herd Improvement Program, December 19, 1983.)

INFORMATION SHEET

B. State (Table 2)

TABLE 2

Breed	Percent Butterfat	Pounds Butterfat	Pounds Milk Production
Holstein	3.60	520	14,448
Ayrshire	3.80	483	12,658
Jersey	4.80	505	10,577
Brown Swiss	3.90	478	12,121
Guernsey	4.60	528	11,428

(NOTE: This information was taken from the Oklahoma Dairy Herd Improvement Program, 1982.)

- V. Dairy judging — Process of carefully analyzing a dairy animal's individual traits and comparing those traits to an ideal animal or standard
- VI. Terms associated with dairy cattle judging
- A. Type — Combination of characteristics that make an animal most useful for a specific purpose
 - B. Balance of symmetry — Proper proportions and blending of parts
 - C. Quality — Overall smoothness, blending of shoulders, and refinement of head and bone
 - D. Soundness — Quality of being correct on the feet and legs
 - E. Scale — Size of animal as determined by skeletal structure
 - F. Breed character — Traits that distinguish one breed from another
 - G. Femininity — Traits distinguishing a female from a male
 - H. Masculinity — Traits distinguishing a male from a female
 - I. Clean — Free from fat
 - J. Spring of rib — Amount ribs arch out from the backbone
 - K. Post-legged — Rear legs too straight when viewed from the side
 - L. Sickle-hocked — Rear legs too curved when viewed from the side

INFORMATION SHEET

- M. Cow-hocked — Rear legs turned so that hocks are close together and feet point out when viewed from the rear
- N. Grant — Recognition that an animal has desirable traits but that these traits are not acceptable to be used any higher in the class

VII. Dairy cattle judging terms (Table 3)

TABLE 3

AREA	DESIRABLE	UNDESIRABLE
Breed Type and General Appearance	Larger cow with more size and scale	Small framed, lacks size and scale
	Shows breed character in head and neck	Lacks breed character in head and neck
	Feminine head	Masculine head
	More breed type and character	Poor breed type and character
	Neck blends smoothly with shoulders	Rough in neck and shoulders
	Stronger and straighter in the loin and chine	Weak in the loin and chine
	Wider and more level at the pins	Narrow in the pins
	Smoother over the rump	Rough over the rump
	Shoulders blend smoothly with body	Shoulders tied in roughly with body
	Wider and more open at the pins	Shallow in the pins
	Blends smoothly at tail setting	Rough over tail setting
	Longer from hip to pins	Shallow from hip to pins
	Stands squarely on the legs	Poor leg structure
	More strength in the loin	Weak in the loin
	Wider in the the thurls	Narrow in the thurls
	Stands straight on rear legs	Crooked rear legs
	Straighter on the pasterns	Weak on the pasterns
	Travels freely	Shows evidence of lameness

INFORMATION SHEET

AREA	DESIRABLE	UNDESIRABLE
Dairy character	More milky appearance More dairy-like Cleaner cut head and neck Sharper in the withers Thinner in the thighs Cleaner and more refined Longer and thinner in the neck and cleaner in the throat More open rib More spread to rib Free of excess flesh Sharper in hips and pins	Less milky appearance Less dairy-like Coarse head and neck Rough and coarse in the withers Thicker in the thighs Thick and rough Short, thick in the neck and throat Closed rib Shallow-ribbed Carrying excess flesh Rough in hips and pins
Body Capacity	Longer, more spacious barrel with more spring to rib Fuller in the foreribs More spring to the foreribs Deeper in the fore and rear rib Deeper-ribbed cow Showing greater arch to the rear rib Longer and deeper in the barrel Deeper in the heart	Short, narrow barrel with less spring to rib Shallow in the foreribs Narrow-bodied Shallow in the fore and rear rib Narrow-ribbed cow Narrow in the rear rib Shorter and shallow in the barrel Shallow in the heart

INFORMATION SHEET

AREA	DESIRABLE	UNDESIRABLE
Body Capacity (continued)	Fuller in the crops Longer in the body Shows more stretch More open in the rib Deeper in the flank Fuller in the heart girth Smoother behind the shoulders Greater body capacity Greater spring of rib and depth of body	Narrow in the crops Short-bodied Short Narrow-ribbed Shallow in the flank Weak in the heart girth Rough behind the shoulders Less body capacity Shallow spring of rib and body depth
Udder	Larger, more capacious udder More uniformly balanced udder that is more level on the floor Teats more squarely placed Teats of uniform size Higher and wider rear udder attachment More nearly level on the floor Carrying (or extending) farther forward Smoother (or stronger) in the fore udder attachment More firmly attached in both fore and rear Showing more quality and texture Teats of more desirable size, shape, and placement	Small, shallow udder Unbalanced udder; tilted up or down Teats poorly placed Teats large or small Short and narrow rear udder attachment Tilted udder Udder does not extend forward Weak fore udder attachment Loosely attached in both fore and rear Poor quality and texture Teats too close together

Information in Table 3 from *Dairy Cattle Judging*, by Clifford Burton, Extension Dairy Specialist, Oklahoma State University. Adapted with permission.

INFORMATION SHEET

VIII. Traits classified by the dairy-type evaluation system (Figures 7-18)

(NOTE: The dairy-type evaluation system was developed by the National Association of Animal Breeders. It is used by classifiers to evaluate individual animals' types for guiding breeding programs or establishing the genetic merit of sires. A committee designed the system around seven basic concepts: evaluation of specific biological traits; use of numerical scores from one biological extreme to the other [linear scoring]; scoring of all similar age contemporaries; evaluation of cows while they still are young; evaluation of both registered and grade cows; scoring of cows without knowledge of sire or previous scores; and analysis by direct comparison procedures.)

A. Stature (measured at withers)

(NOTE: Points given for stature are 90 to 99—very tall; 80 to 89—tall; 70 to 79—intermediate; 60 to 69—low set; and 50 to 59—very low set.)

B. Chest and body (considering age and stage of lactation)

EXAMPLE:

FIGURE 7



(NOTE: Points given for chest and body are 90 to 99—wide chest, deep rib, long body; 80 to 89—wide and strong, moderate length of body; 70 to 79—intermediate; 60 to 69—narrow; and 50 to 59—extremely narrow and frail.)

INFORMATION SHEET

C. Dairy character (independent of performance)

EXAMPLE:

FIGURE 8

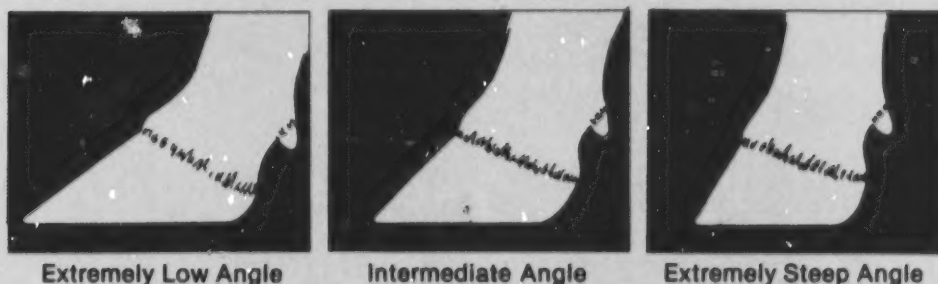


(NOTE: Points given for dairy character are 90 to 99—extremely sharp; 80 to 89—clean cut, open and angular; 70 to 79—intermediate; 60 to 69—thick and coarse; and 50 to 59—extremely thick and tight-ribbed.)

D. Foot shape (angle)

EXAMPLE:

FIGURE 9



(NOTE: Points given for foot shape are 90 to 99—extremely steep angle, indicated by small feet [$> 50^\circ$]; 80 to 89—moderate angle, well-formed feet; 70 to 79—intermediate angle, well-formed feet [$40-45^\circ$]; 60 to 69—low angle, shallow or flared foot; and 50 to 59—extremely low angle, indicated by long toes.)

INFORMATION SHEET

E. Rear legs (side view)

EXAMPLE:

FIGURE 10



Extremely Posty



Slight Set in Hock



Extremely Sickled

(NOTE: Points given for rear legs are 90 to 99—extremely sickled; 80 to 89—moderate set in hock; 70 to 79—slight set in hock; 60 to 69—straight in hock; and 50 to 59—extremely posty, or overextended.)

F. Pelvic angle

EXAMPLE:

FIGURE 11



Pins Higher Than Hooks



Nearly Level



Severe Slope

(NOTE: Points given for pelvic angle are 90 to 99—severe slope from hooks to pins; 80 to 89—moderate slope from hooks to pins; 70 to 79—nearly level from hooks to pins; 60 to 69—pins higher than hooks; and 50 to 59—pins clearly higher than hooks.)

INFORMATION SHEET

G. Rump width

EXAMPLE:

FIGURE 12



(NOTE: Points given for rump width are 90 to 99—extreme width of pelvic area; 80 to 89—wide width of pelvic area; 70 to 79—intermediate width of pelvic area; 60 to 69—narrow in pelvic area; and 50 to 59—extremely narrow in pelvic area.)

H. Fore udder attachment

EXAMPLE:

FIGURE 13



(NOTE: Points given for fore udder attachment are 90 to 99—extremely tight attachment; 80 to 89—strong, firm; 70 to 79—intermediate strength; 60 to 69—loose attachment; and 50 to 59—extremely broken.)

INFORMATION SHEET

I. Rear udder width (at attachment)

EXAMPLE:

FIGURE 14

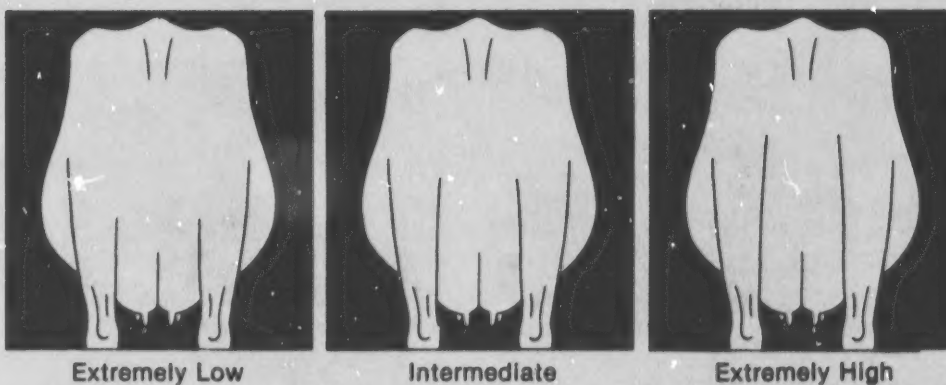


(NOTE: Points given for rear udder width are 90 to 99—extremely wide; 80 to 89—wide; 70 to 79—intermediate width; 60 to 69—narrow; and 50 to 59—extremely narrow.)

J. Rear udder height (at attachment)

EXAMPLE:

FIGURE 15



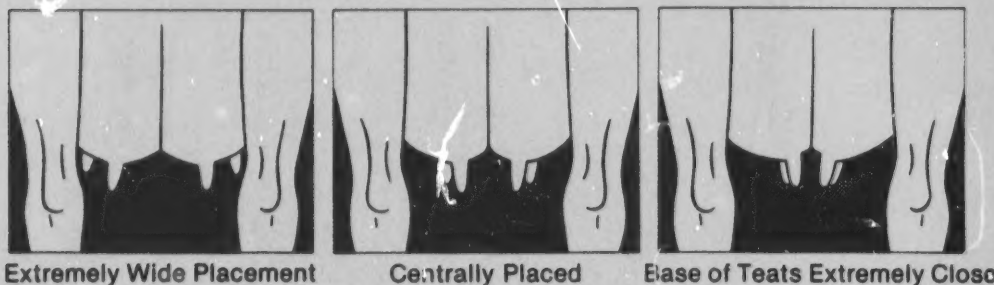
(NOTE: Points given for rear udder height are 90 to 99—extremely high; 80 to 89—high; 70 to 79—intermediate; 60 to 69—low; and 50 to 59—extremely low.)

INFORMATION SHEET

K. Teat placement (rear view)

EXAMPLE:

FIGURE 16



(NOTE: Points given for teat placement are 90 to 99—base of teats extremely close; 80 to 89—teats too close; 70 to 79—centrally placed, nearly aligned, tilting inward; 60 to 69—intermediate placement, front teats wider than rear teats; and 50 to 59—extremely wide placement.)

L. Suspensory ligament (cleft)

EXAMPLE:

FIGURE 17



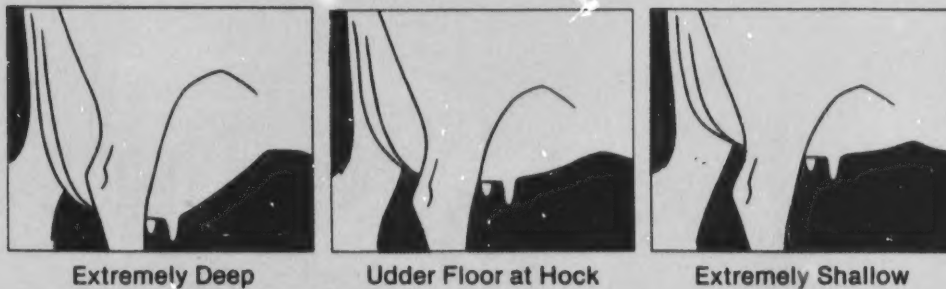
(NOTE: Points given for suspensory ligament are 90 to 99—extreme cleft; 80 to 89—clearly defined halving; 70 to 79—intermediate halving; 60 to 69—flat udder floor; and 50 to 59—broken.)

INFORMATION SHEET

M. Udder depth (relative to point of hock)

EXAMPLE:

FIGURE 18



(NOTE: Points given for udder depth are 90 to 99—extremely shallow, udder floor well above hock; 80 to 89—udder floor clearly above hock; 70 to 79—udder floor at the hock; 60 to 69—udder floor clearly below hock; and 50 to 59—extremely deep.)

Figures 7-18 reprinted by permission from December 10 and 25, 1979, issue of *Hoard's Dairyman*, Copyright 1979 by W.D. Hoard and Sons Company, Fort Atkinson, Wisconsin. Also by permission of the National Association of Animal Breeders, Columbia, Missouri.

INFORMATION SHEET

IX. Factors to consider in selecting dairy cattle

A. General appearance (Figure 19)

(NOTE: Cows with a good general appearance are attractive, have femininity, vigor, stretch, scale, and a harmonious blend of all parts. Evaluate all parts of the cow when considering general appearance.)

EXAMPLE:

FIGURE 19



Courtesy: Holstein-Friesian Association of America, Brattleboro, Vermont.

INFORMATION SHEET

B. Dairy character (Figure 20)

(NOTE: Dairy character refers to angularity and general openness without weakness, freedom from coarseness, and evidence of milking ability with udder quality, giving due regard to stage of lactation.)

EXAMPLE:

FIGURE 20



Courtesy: American Guernsey Cattle Club, Columbus, Ohio.

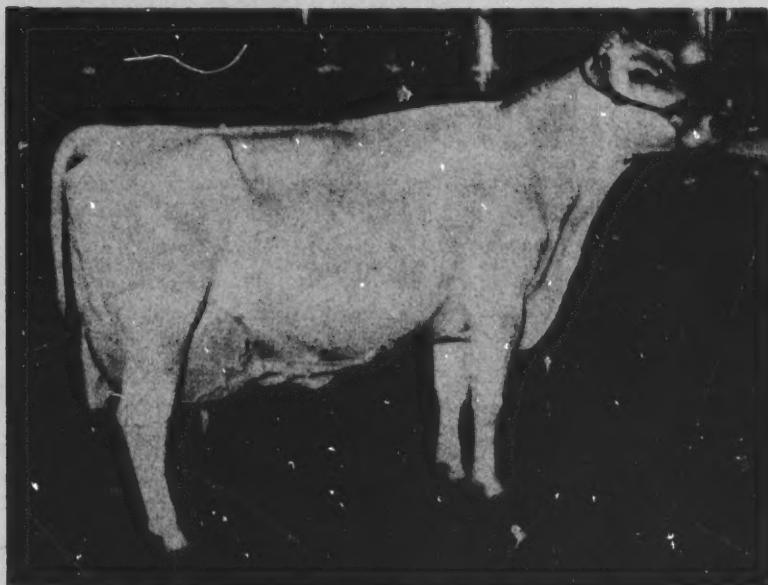
INFORMATION SHEET

C. Body capacity (Figure 21)

(NOTE: Body capacity is determined by the size of the barrel and by the heart girth. The length, width, and depth of the body determine its capacity.)

EXAMPLE:

FIGURE 21



Courtesy: Brown Swiss Cattle Breeders Association of the United States of America, Beloit, Wisconsin.

INFORMATION SHEET

D. Udder (Figures 22 and 23)

(NOTE: The udder should be large enough to produce and store milk. The length, width, and the depth of the udder determine its capacity. The udder should be attached high and wide behind and carry well forward in front. The udder should not have a tendency to break away from the body. The udder should have four evenly spaced teats of uniform size. The four quarters of the udder should be of equal size and blend in smoothly with each other. The mammary veins should be large, prominent, long, and should stand out. The milk welis should be large and numerous.)

EXAMPLES:

FIGURE 22



Courtesy: Agri Graphics, Ltd., Carv. Illinois.

INFORMATION SHEET

FIGURE 23



Courtesy: Agri Graphics, Ltd., Cary, Illinois.

INFORMATION SHEET

- X. Purpose of the Dairy Cow Unified Score Card — To indicate the points or criteria to be considered in selecting dairy animals and the relative emphasis that should be given each point

EXAMPLE:

DAIRY COW UNIFIED SCORE CARD

Copyrighted by The Purebred Dairy Cattle Association, 1943. Revised, and Copyrighted 1957, 1971, 1982.

Breed characteristics should be considered in the application of this score card		Perfect Score
Order of observation		
1. GENERAL APPEARANCE (Attractive individuality with, femininity, vigor, stretch, scale, and harmonious blending of all parts with impressive style and carriage.)		35
BREED CHARACTERISTICS — (see reverse side)	5	
STATURE — height including moderate length in the leg bones with a long bone pattern throughout the body structure.	5	
FRONT END — adequate constitution with strength and dairy refinement.	5	
SHOULDER BLADES and elbow set firmly and smoothly against the chest wall and withers to form a smooth union with the neck and body. CHEST deep and full with ample width between front legs.	5	
BACK — straight and strong; LOIN — broad, strong and nearly level AND RUMP — long, wide and nearly level with pin bones slightly lower than hip bones. THURLS high and wide apart; TAIL HEAD set nearly level with topline and with tail head and tail free from coarseness.	5	
LEGS AND FEET — bone flat and strong. FRONT LEGS straight, wide apart and squarely placed; HIND LEGS, nearly perpendicular from hock to pastern from a side view and straight from the rear view; HOCKS cleanly molded free from coarseness and puffiness; PASTERNS short and strong with some flexibility and FEET short, well rounded with deep heel and level sole.	15	
2. DAIRY CHARACTER (Angularity and general openness without weakness, freedom from coarseness, and evidence of milking ability with udder quality giving due regard to stage of lactation)		20
NECK — long, lean, and blending smoothly into shoulders; clean cut throat, dewlap, and brisket; WITHERS — sharp with chine prominent; RIBS — wide apart, rib bones wide, flat and long; THIGHS — incurving to flat and wide apart from the rear view, providing ample room for the udder and its rear attachment, and SKIN — thin, loose and pliable.		
3. BODY CAPACITY (Relatively large in proportion to size, age and period of gestation of animal, providing ample capacity, strength, and vigor)		10
CHEST — large, deep and wide floor with well sprung fore ribs blending into the shoulders; crops full. BODY — strongly supported, long, deep and wide; depth and spring of rib tending to increase toward the rear. FLANKS — deep and refined.		
4. UDDER (Strongly attached, well balanced with adequate capacity possessing quality indicating heavy milk production for long period of usefulness)		35
FORE UDDER — strongly and smoothly attached, moderate length and uniform width from front to rear.	6	
REAR UDDER — strongly attached, high, wide with uniform width from top to bottom and slightly rounded to udder floor.	8	
UDDER SUPPORT — udder carried snugly above the hocks showing a strong suspensory ligament with clearly defined halving.	11	
TEATS — uniform size of medium length and diameter, cylindrical, squarely placed under each quarter, plumb, and well spaced from side and rear views	5	
BALANCE, SYMMETRY AND QUALITY — symmetrical with moderate length, width and depth, no quartering on sides and level floor as viewed from the side; soft, pliable and well collapsed after milking; quarters evenly balanced. Because of the natural undeveloped udder in heifer calves and yearlings, less emphasis is placed on udder and more on general appearance, dairy character and body capacity. A slight to serious discrimination applies to overdeveloped, fatty udders in heifer calves and yearlings.	5	
TOTAL		100

Reprinted with permission of the Purebred Dairy Cattle Association, Peterborough, New Hampshire.

INFORMATION SHEET

- XI. Purpose of the FFA placing card — To identify the judge and to record the placing (Figure 24)

(NOTE: It is very important to write clearly and fill the card out correctly. An incorrectly written card can cause a team to lose a contest.)

EXAMPLE:

FIGURE 24

FFA PLACING CARD		Contestant's Initial <u>BP</u> No. <u>87-A</u>	Class <u>Jersey Cows</u>	1-2-3-4	
				1-2-4-3	
				1-3-2-4	
				1-3-4-2	
				1-4-2-3	
				1-4-3-2	
				2-1-3-4	
				2-1-4-3	
				2-3-1-4	
				2-3-4-1	
				2-4-1-3	
				2-4-3-1	
				3-1-2-4	
				3-1-4-2	
				3-2-1-4	
				3-2-4-1	
				3-4-1-2	
				3-4-2-1	
				4-1-2-3	
				4-1-3-2	
				4-2-1-3	
				4-2-3-1	
				4-3-1-2	
				4-3-2-1	
Placing Grade _____					
Reason Grade _____					

- XII. Computing placing scores

(NOTE: There are always four animals in a dairy class. The maximum score possible on a class is fifty. A score of fifty points represents a perfect placing, an exact match with the official placings on the class. After the class is judged and the official placings have been announced, you should be able to compute your score. Cuts, or point variations, are made between the different animals in the class. Use simple addition and subtraction to calculate your score.)

- A. Compare your placings to official placings

EXAMPLE:	Official Placing	Your Placing
	3 - 2 - 1 - 4	3 - 4 - 1 - 2
	4 - 2 - 2 (cuts)	

INFORMATION SHEET

B. Write your placings as pairs

EXAMPLE: 3/4 4/1 1/2
 3/1 4/2
 3/2

C. Use cuts to calculate points

1. Compare each pair you placed to the corresponding pair in the official placing
2. Count zero points for each matching pair
3. Count points for pairs that do not match by adding cuts that fall between the paired numbers
4. Total the points for all pairs

EXAMPLE: Official placing Your placing
 3 - 2 - 1 - 4 3 - 4 - 1 - 2
 4 2 2
 3/4 = 0 points 4/1 = 2 points 1/2 = 2 points
 3/1 = 0 points 4/2 = 2 + 2 or 4 points
 3/2 = 0 points
 Total of points = 2 + 4 + 2 = 8 points

D. Subtract total points from 50 to find placing score

EXAMPLE: Subtract 8 points from 50 points = 42 points
 Your score = 42

(NOTE: If you had placed the class 2 - 3 - 1 - 4, you would have had a top switch, which would have cost you four points making your score 46 points. If your placing was 3 - 1 - 2 - 4, the switch on the middle pair would cost you 2 points. Your score would be 48.)

XIII. Purpose of giving reasons for placings — To present your opinion and justification for placing a class of livestock

(NOTE: It is essential that we learn to communicate with each other in a manner that both parties understand and that relates to the conversation. Giving reasons for placings will provide you with the opportunity to organize your thoughts in a confident, precise, and logical manner.)

INFORMATION SHEET

XIV. Steps to follow in taking notes for oral reasons for placings (Figure 25)

(NOTE: It is important to learn to take good notes for giving oral reasons for your placings. You might have to judge several classes in a day and give the reasons at a later time. By taking good notes, you will be able to present a better set of reasons. It is suggested that you carry a 6-by-9-inch stenographer's spiral notebook and a pencil to write your notes.)

EXAMPLE:

FIGURE 25

Holstein Cows 3-4-1-2 1. Straight pair of rear legs, strong pasterns, wide ribs 2. Thick neck, unbalanced udder, weak attachments, weak udder 3. Strong dairy character, excellent general appearance, more balanced udder 4. High and wide rear udder attachment, deep rear rib.	
$\frac{3}{4}$ More breed character and general appearance	
Long, lean neck	$\frac{4}{5}$ Deeper in rear rib
Sharper in withers	Higher and wider rear udder attachment
Leaner in thighs	
Stronger in back and loin	
More level from hip to pin	
Neater in tail setting	
Stands on straighter pair of rear legs	
Deeper in chest	
More balance to udder	
More even teat placement	
$\frac{4}{5}$ Excels in body capacity and mammary system	
Deeper in rear rib	$\frac{1}{4}$ Stands on straighter pair of rear legs
More spread of rib	
Higher and stronger rear udder attachment	Stronger in pastern
More rear udder development with a neater teat placement	
	$\frac{3}{4}$ More body character
$\frac{1}{2}$ More general appearance	Greater spring and spread of rib
More style and balance	Deeper in chest and rear ribs
More breed character in head and neck	
Stands on straighter pair of rear legs	Cut 1
Sharper cow with more dairy character	Lacks overall balance
Sharper in withers	Thick in neck
Leaner in neck	Unbalanced udder
Wider in ribs	Weak fore and rear udder attachments

INFORMATION SHEET

- A. Identify the class
 - B. Write your placing at the top of the page
 - C. Write the numbers 1 through 4 down the side of the page, leaving approximately three lines between the numbers
 - D. Take notes on each animal to identify strong points and criticisms of each
 - E. Take notes by pairs, giving advantages as well as grants
- XV. Techniques for presenting oral reasons for placings
- A. Speak with a clear, powerful voice
 - B. Open reasons with a precise opening statement
 - C. Never carry notes into reason room
 - D. Stand erect, with feet and shoulders aligned
(NOTE: Place right hand firmly behind back and hold placing card in left hand.)
 - E. Stand 4 to 8 feet away from the reason-taker
 - F. Talk in a firm voice
(NOTE: Avoid shouting.)
 - G. Use good voice control, both in speed and volume, to emphasize certain points
 - H. Present reason-taker with an accurate picture of animal
 - I. Avoid body movement
(NOTE: Some head movement is acceptable.)
 - J. Use identification characteristics whenever possible to let the reason-taker know that you saw the class
 - K. Look reason-taker squarely in the eye
 - L. Stay within the allowable two minutes
(NOTE: Aim for one minute and twenty seconds to one minute and forty-five seconds to give placing reasons.)
 - M. Avoid using more than three terms in succession
 - N. Never conclude reasons with "For these reasons I placed this class . . ."

INFORMATION SHEET

XVI. Steps to follow in presenting oral reasons for placings

(NOTE: For the purpose of giving reasons for placings, a class of four animals is divided into three pairs: a top pair, a middle pair, and a bottom pair. The following basic outline is for a set of reasons for a sample placing of 1 - 2 - 3 - 4.)

A. Present opening statement

EXAMPLE: Give name of class and how you placed it; give criticisms and outstanding good points.

(NOTE: In some cases a general statement about the entire class may be more applicable.)

B. Discuss top pair

EXAMPLE: Give reasons for placing 1 over 2, using comparative terms. Give grants for 2 over 1, using comparative terms to point out advantages of 2 over 1. In close placings, several grants would be desirable as long as they are true. Give criticisms of 2, using descriptive terms. Always criticize an animal on its own merits rather than comparing with the animal placed above.

C. Discuss middle pair

EXAMPLE: Give reasons for placing 2 over 3; give grants for 3 over 2; and give criticisms of 3.

D. Discuss bottom pair

EXAMPLE: Give reasons for placing 3 over 4; give grants for 4 over 3.

DAIRY BREEDS AND SELECTION
UNIT V

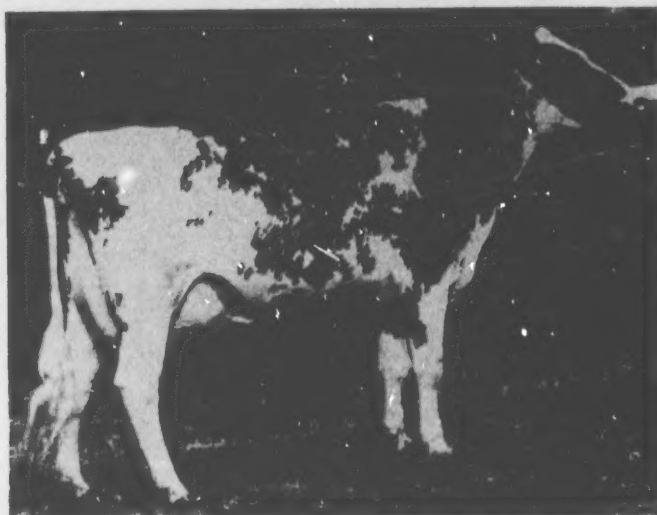
ASSIGNMENT SHEET #1 — IDENTIFY MAJOR BREEDS OF DAIRY CATTLE

NAME _____

SCORE _____

Whether purchasing or judging dairy cattle, you must be able to call the breeds by their correct names.

Shown below and on the following pages are photographs of different breeds of dairy cattle. Identify each breed by writing its correct name in the blank below the photograph.



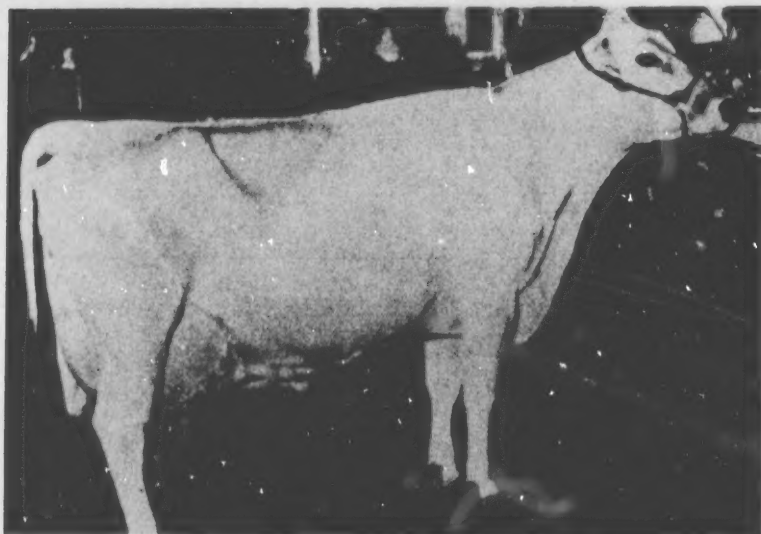
A. _____

534-D

ASSIGNMENT SHEET #1



B. _____

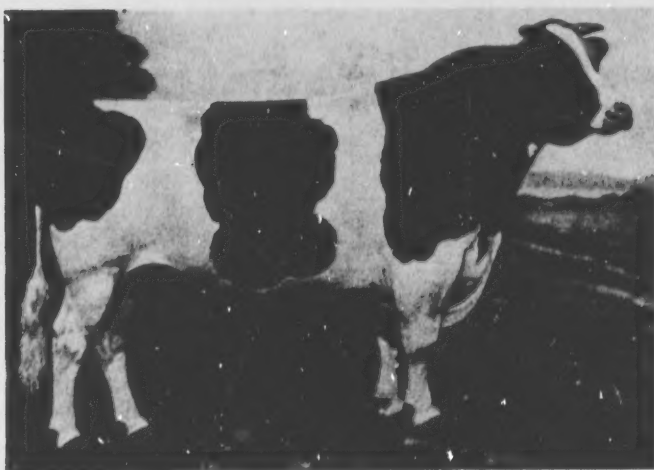


C. _____

ASSIGNMENT SHEET #1



D. _____



E. _____

Photographs in this assignment sheet courtesy: Ayrshire Breeders Association, Brandon, Vermont; Brown Swiss Cattle Breeders Association of the United States of America, Beloit, Wisconsin; American Jersey Cattle Club, Columbus, Ohio; American Guernsey Cattle Club, Columbus, Ohio; and Holstein-Friesian Association of America, Brattleboro, Vermont.

DAIRY BREEDS AND SELECTION
UNIT V

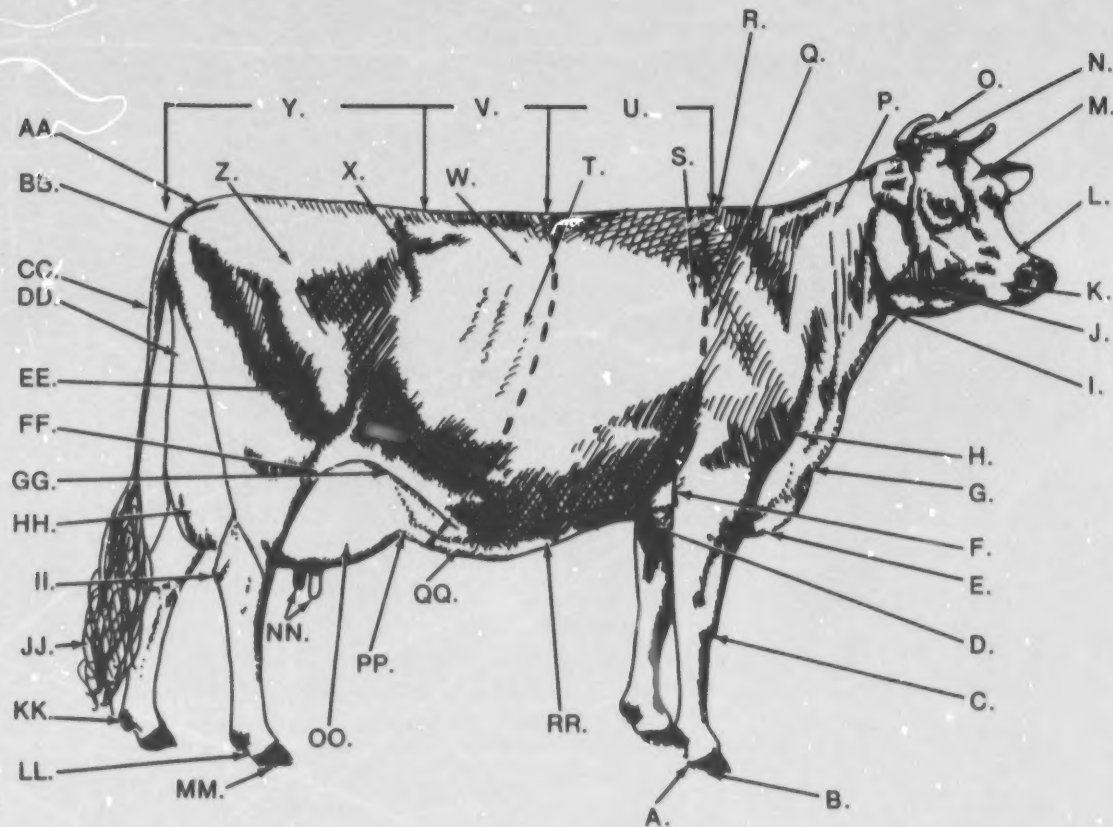
ASSIGNMENT SHEET #2 — LABEL THE PARTS OF A DAIRY COW

NAME _____

SCORE _____

A good dairy judge is able to identify the parts of a dairy cow. When judging, you will be making reference to different parts and you must refer to the parts by their correct names. Label the parts of the dairy cow illustrated on the following page.

ASSIGNMENT SHEET #2



Used with permission of the American Jersey Cattle Club, Columbus, Ohio.

ASSIGNMENT SHEET #2

A.	_____	W.	_____
B.	_____	X.	_____
C.	_____	Y.	_____
D.	_____	Z.	_____
E.	_____	AA.	_____
F.	_____	BB.	_____
G.	_____	CC.	_____
H.	_____	DD.	_____
I.	_____	EE.	_____
J.	_____	FF.	_____
K.	_____	GG.	_____
L.	_____	HH.	_____
M.	_____	II.	_____
N.	_____	JJ.	_____
O.	_____	KK.	_____
P.	_____	LL.	_____
Q.	_____	MM.	_____
R.	_____	NN.	_____
S.	_____	OO.	_____
T.	_____	PP.	_____
U.	_____	QQ.	_____
V.	_____	RR.	_____

DAIRY BREEDS AND SELECTION
UNIT V

ASSIGNMENT SHEET #3 — USE DAIRY JUDGING TERMS

NAME _____ SCORE _____

Judging dairy cattle is interesting and exciting. Writing and giving oral reasons for placings may be two of the most important things you learn in your vocational agriculture class. Giving reasons for placings requires that you think about what you say and that you present your thoughts in an organized manner. Your reasons represent your ideas and your opinions regarding the class. To give good reasons, you must learn to use judging terms correctly.

Listed below are terms for desirable and undesirable traits. The purpose of this assignment is for you to be able to state the term for an undesirable trait when given a term for a desirable trait or to state the term for a desirable trait when given a term for an undesirable trait. In the blank beside each of the terms, write the correct opposite response.

- A. Feminine head _____
- B. Wider in the thurls _____
- C. Smoother over the rump _____
- D. Poor leg structure _____
- E. Travels freely _____
- F. Shoulders blend smoothly with body _____
- G. Weak in the loin _____
- H. Wider and more level at the pins _____
- I. Stands straight on rear legs _____
- J. More dairy-like _____
- K. More spread to rib _____
- L. Closed rib _____
- M. Rough in hips and pins _____
- N. Thicker in the thighs _____
- O. Cleaner and more refined _____
- P. Fuller in the foreribs _____

ASSIGNMENT SHEET #3

- Q. Deeper-ribbed cow _____
- R. Shallow in the heart _____
- S. Short-bodied _____
- T. Deeper in the flank _____
- U. Narrow in the rear _____
- V. Larger, more capacious udder _____
- W. Teats more squarely placed _____
- X. Showing more quality and texture _____
- Y. Teats large or small _____
- Z. Teats poorly placed _____
- AA. More nearly level on the floor _____
- BB. Weak fore udder attachment _____

DAIRY BREEDS AND SELECTION
UNIT V

ASSIGNMENT SHEET #4 — USE DAIRY-TYPE EVALUATION SYSTEM

NAME _____

SCORE _____

The dairy-type evaluation system classifies cattle according to thirteen major traits. As a dairy judge, you must also learn to use these traits to evaluate cattle.

The following drawings show examples of these traits. Match the drawings to their correct descriptions. Write the appropriate letters in the blanks.

A. Chest and body (considering age and stage of lactation)



- ____ 1. Extremely narrow and frail
____ 2. Intermediate
____ 3. Wide chest, deep rib

ASSIGNMENT SHEET #4

B. Dairy character (Independent of performance)



- ____ 1. Extremely thick
____ 2. Intermediate
____ 3. Extremely sharp

C. Foot shape (angle)



- ____ 1. Extremely low angle
____ 2. Intermediate angle
____ 3. Extremely deep angle

ASSIGNMENT SHEET #4

D. Rear legs (side view)



- ____ 1. Extremely posty
____ 2. Slight set in hock
____ 3. Extremely sickled

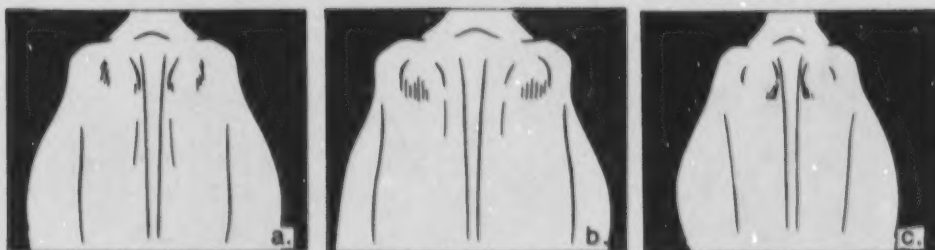
E. Pelvic angle



- ____ 1. Pins higher than hooks
____ 2. Nearly level
____ 3. Severe slope

ASSIGNMENT SHEET #4

F. Rump width



- ____ 1. Extremely narrow
____ 2. Intermediate width
____ 3. Extreme width

G. Fore udder attachment



- ____ 1. Extremely broken
____ 2. Intermediate strength
____ 3. Extremely tight attachment

ASSIGNMENT SHEET #4

H. Rear udder width (at attachment)

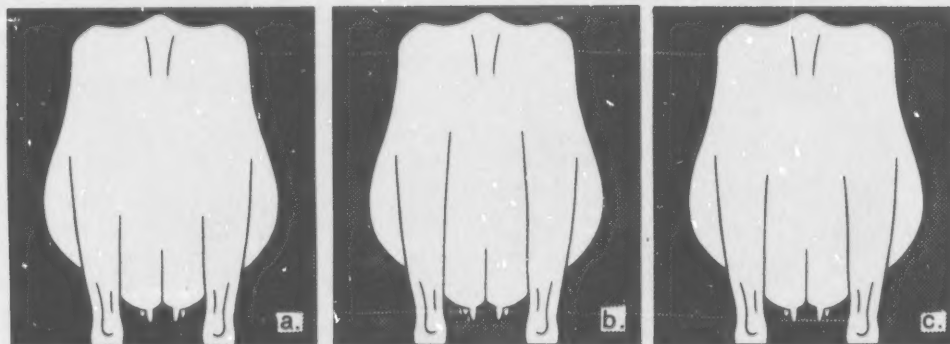


____ 1. Extremely narrow

____ 2. Intermediate width

____ 3. Extremely wide

I. Rear udder height (at attachment)



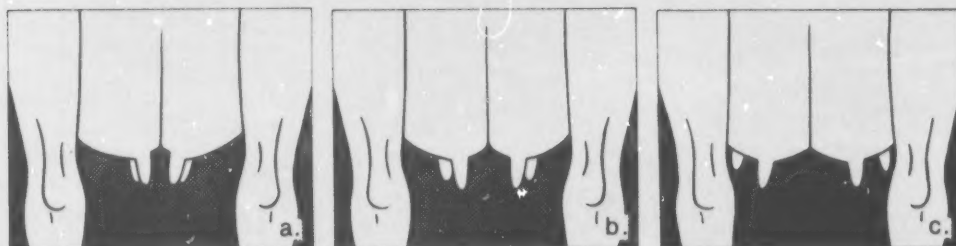
____ 1. Extremely low

____ 2. Intermediate

____ 3. Extremely high

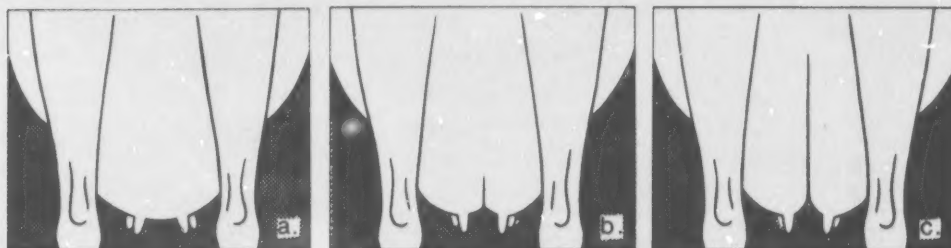
ASSIGNMENT SHEET #4

J. Teat placement (rear view)



- ____ 1. Extremely wide placement
____ 2. Centrally placed
____ 3. Base of teats extremely close

K. Suspensory ligament (cleft)



- ____ 1. Broken
____ 2. Intermediate halving
____ 3. Extreme cleft

ASSIGNMENT SHEET #4

L. Udder depth (relative to point of hock)



- ____ 1. Extremely deep
____ 2. Udder floor at hock
____ 3. Extremely shallow

Illustrations in this assignment sheet reprinted by permission from December 10 and 25, 1979, issue of *Hoard's Dairyman*, Copyright 1979 by W.D. Hoard and Sons Company, Fort Atkinson, Wisconsin. Also by permission of the National Association of Animal Breeders, Columbia, Missouri.

DAIRY BREEDS AND SELECTION
UNIT V

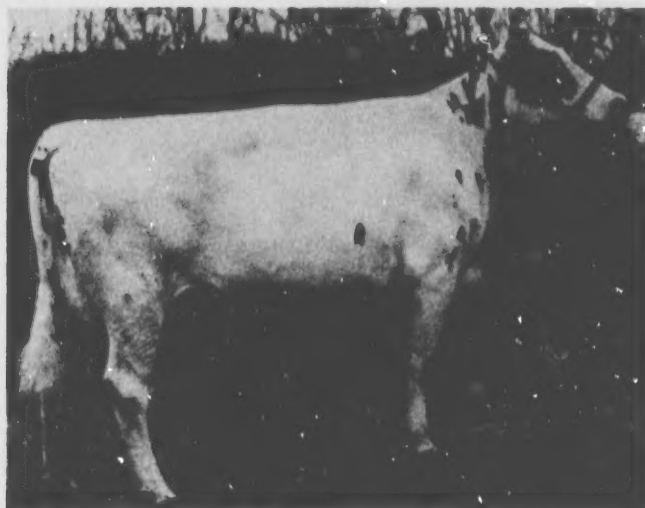
ASSIGNMENT SHEET #5 — EVALUATE ANIMALS, USING THE DAIRY COW
UNIFIED SCORE CARD CRITERIA

NAME _____

SCORE _____

The Dairy Cow Unified Score Card indicates the points or criteria to be considered in selecting dairy animals and the relative emphasis that should be given to each point. A good dairy cattle judge must learn to use the card when evaluating cattle. Below are several pictures of dairy cows. Use criteria from the score card to evaluate the strengths and weaknesses of the cattle. Below each picture list the desirable and/or undesirable characteristics of the animal, keeping in mind the Dairy Cow Unified Score Card criteria.

A.



Courtesy: *The Ayrshire Digest*, Brandon, Vermont.

Desirable

Undesirable

ASSIGNMENT SHEET #5

B.



Courtesy: Agri Graphics, Ltd., Cary, Illinois.

Desirable

Undesirable

ASSIGNMENT SHEET #5

C.



Source: Holstein-Friesian Association of America, Brattleboro, Vermont.

Desirable

Undesirable

ASSIGNMENT SHEET #5

D.

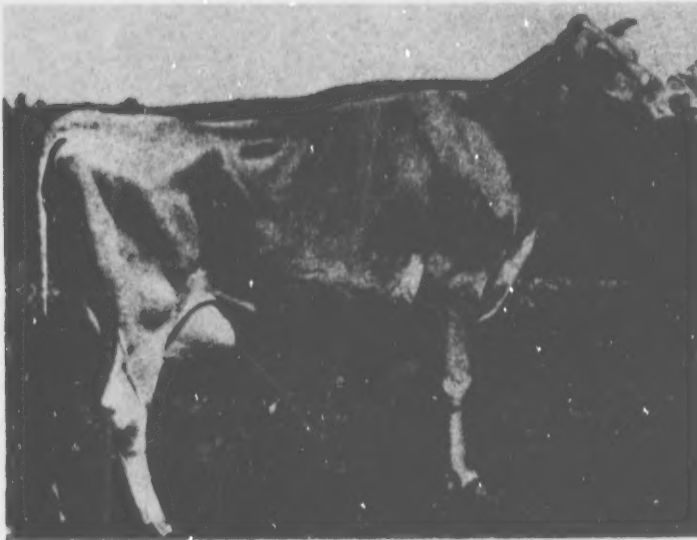


Courtesy: American Jersey Cattle Club, Columbus, Ohio.

Desirable**Undesirable**

ASSIGNMENT SHEET #5

E.



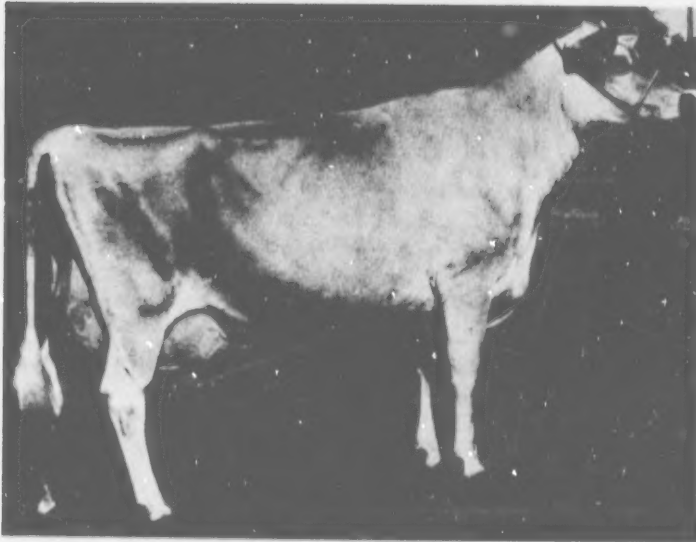
Courtesy: American Jersey Cattle Club, Columbus, Ohio.

Desirable

Undesirable

ASSIGNMENT SHEET #5

F.



Courtesy: American Jersey Cattle Club, Columbus, Ohio.

Desirable

Undesirable

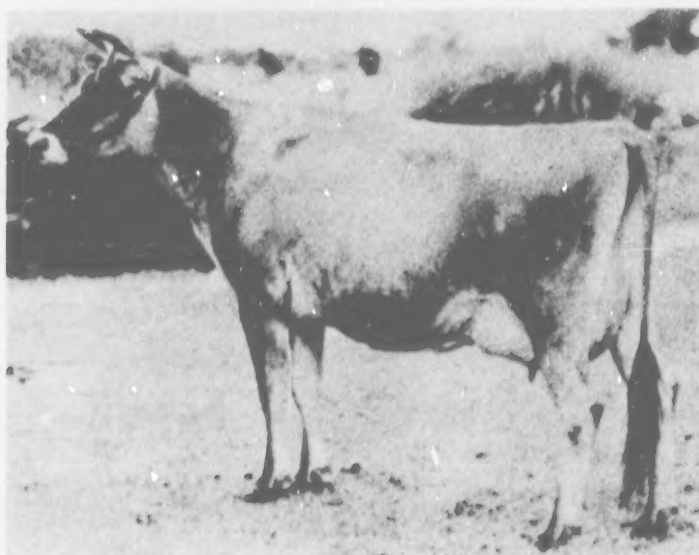
DAIRY BREEDS AND SELECTION
UNIT VASSIGNMENT SHEET #6 — JUDGE CLASSES OF COWS, USING POINT SYSTEM
FROM DAIRY COW UNIFIED SCORE CARD

NAME _____

SCORE _____

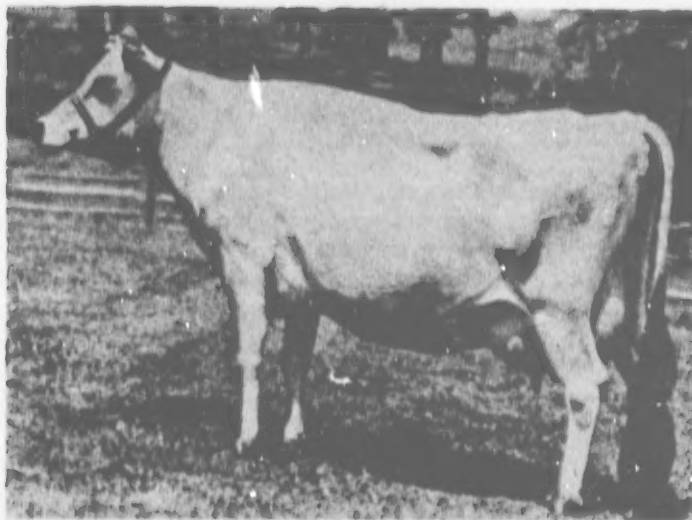
In Assignment Sheet #5, you used the Dairy Cow Unified Score Card criteria to evaluate cows. In this assignment sheet, you will use a point system to judge a class of Jersey cows and a class of Holstein cows. One of the best ways to learn to judge dairy cattle is to use the four parts of the Dairy Cow Unified Score Card to evaluate each animal in the class. Following each class is a box that has been prepared for you. The numbers at the top of each box represent the numbers of the cows in the class. To the left of each box are the four parts of the Dairy Cow Unified Score Card with the perfect score for each part. GA stands for general appearance, DC for dairy character, BC for body capacity, and U for udder. Judge each class, write point evaluations in the boxes, and write your placings in the blanks.

A. Class #1 — Jersey cows



1

ASSIGNMENT SHEET #6



2



3

ASSIGNMENT SHEET #6



4

Class #1 — Jersey cows

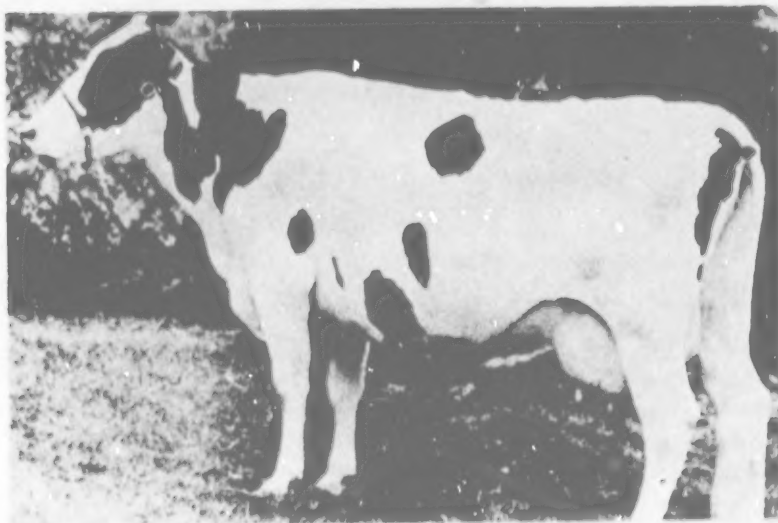
	1	2	3	4
GA 35 pts.				
DC 20 pts.				
BC 10 pts.				
U 35 pts.				
Totals				

Placing _____

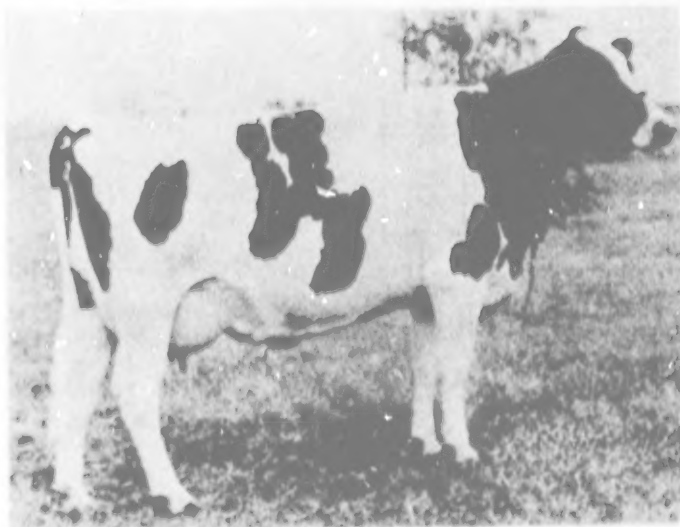
Source for photographs 1 through 4, Jersey cows: American Jersey Cattle Club, Columbus, Ohio.

ASSIGNMENT SHEET #6

B. Class #2 — Holstein cows

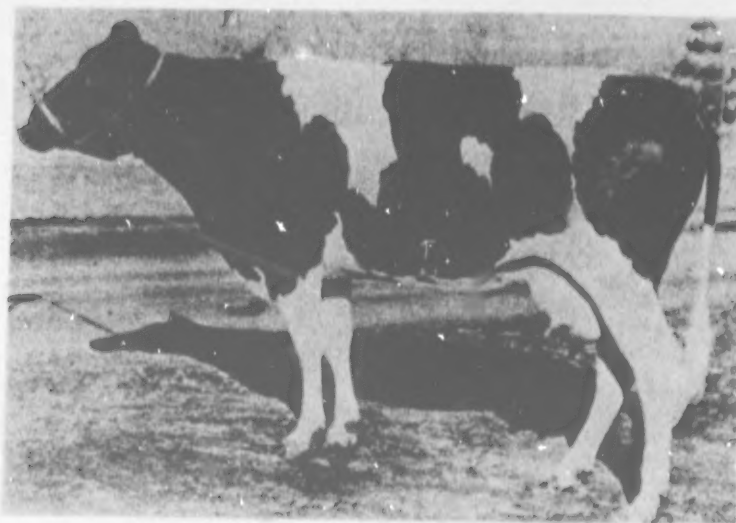


1



2

ASSIGNMENT SHEET #6



3



4

860

ASSIGNMENT SHEET #6

Class #2 — Holstein cows

	1	2	3	4
GA 35 pts.				
DC 20 pts.				
BC 10 pts.				
U 35 pts.				
Totals				

Placing _____

Source for photographs 1 through 4 Holstein cows: Holstein-Friesian Association of America, Brattleboro, Vermont.

DAIRY BREEDS AND SELECTION UNIT V

ASSIGNMENT SHEET #7 — USE FFA PLACING CARDS

NAME _____

SCORE _____

The FFA placing card is the official card used in dairy judging contests. As a vocational agriculture student, you must learn to use the card correctly. The card identifies you as a contestant, and it indicates to the officials how you placed the class. It is your responsibility as a contestant to make sure the card is filled out completely and accurately before turning in the card to the judging officials. There should be only one mark on the card indicating your placings of the class; see the example below. Always use a pencil when filling out the card. Four parts of the card should be completed: contestant's initials, number, class name, and placing.

EXAMPLE:

FFA PLACING CARD		Contestant's Initial <u>BAP</u>	No. <u>100-A</u>	1-2-3-4	
		Class <u>Holstein heifers</u>		1-2-4-3	
				1-3-2-4	
				1-3-4-2	
				1-4-2-3	
				1-4-3-2	
				2-1-3-4	X
				2-1-4-3	
				2-3-1-4	
				2-3-4-1	
				2-4-1-3	
				2-4-3-1	
				3-1-2-4	
				3-1-4-2	
				3-2-1-4	
				3-2-4-1	
				3-4-1-2	
				3-4-2-1	
				4-1-2-3	
				4-1-3-2	
				4-2-1-3	
				4-2-3-1	
				4-3-1-2	
				4-3-2-1	
Placing Grade _____					
Reason Grade _____					

ASSIGNMENT SHEET #7

Using the information given below, fill out the cards.

- A. Use your correct initials. You are contestant number 86-B judging a class of Holstein aged cows. You placed the class 2 - 3 - 4 - 1.

FFA PLACING CARD		Contestant's Initial _____	No. _____	Class _____	1-2-3-4	
					1-2-4-3	
					1-3-2-4	
					1-3-4-2	
					1-4-2-3	
					1-4-3-2	
					2-1-3-4	
					2-1-4-3	
					2-3-1-4	
					2-3-4-1	
					2-4-1-3	
					2-4-3-1	
					3-1-2-4	
					3-1-4-2	
					3-2-1-4	
					3-2-4-1	
					3-4-1-2	
					3-4-2-1	
					4-1-2-3	
					4-1-3-2	
					4-2-1-3	
					4-2-3-1	
					4-3-1-2	
					4-3-2-1	
Placing Grade _____						
Reason Grade _____						

ASSIGNMENT SHEET #7

- B. Use your correct initials. You are contestant number 83-C; you are judging a class of Jersey heifers. You placed the class 4 - 3 - 2 - 1.

FFA PLACING CARD	Contestant's Initial _____ No. _____ Class _____	1-2-3-4	
		1-2-4-3	
		1-3-2-4	
		1-3-4-2	
		1-4-2-3	
		1-4-3-2	
		2-1-3-4	
		2-1-4-3	
		2-3-1-4	
		2-3-4-1	
		2-4-1-3	
		2-4-3-1	
		3-1-2-4	
		3-1-4-2	
		3-2-1-4	
		3-2-4-1	
		3-4-1-2	
		3-4-2-1	
		4-1-2-3	
		4-1-3-2	
		4-2-1-3	
		4-2-3-1	
		4-3-1-2	
		4-3-2-1	
Placing Grade _____			
Reason Grade _____			

ASSIGNMENT SHEET #7

- C. Use your correct initials. You are contestant number 75-D, and you are judging a class of Brown Swiss aged cows. You placed the class 2 - 1 - 4 - 3.

FFA PLACING CARD		Contestant's Initial _____	No. _____	Class _____	1-2-3-4	
					1-2-4-3	
Placing Grade _____		Reason Grade _____			1-3-2-4	
					1-3-4-2	
					1-4-2-3	
					1-4-3-2	
					2-1-3-4	
					2-1-4-3	
					2-3-1-4	
					2-3-4-1	
					2-4-1-3	
					2-4-3-1	
					3-1-2-4	
					3-1-4-2	
					3-2-1-4	
					3-2-4-1	
					3-4-1-2	
					3-4-2-1	
					4-1-2-3	
					4-1-3-2	
					4-2-1-3	
					4-2-3-1	
					4-3-1-2	
					4-3-2-1	

DAIRY BREEDS AND SELECTION
UNIT V

ASSIGNMENT SHEET #8 — COMPUTE PLACING SCORES

NAME _____ SCORE _____

Before contestants judge a class of dairy animals, a group of officials judge the class and identify how the class should be placed. This is referred to as the official placing. There is a total of fifty possible points in a judging class. There are 24 possible placings on any given class. The officials determine cuts, or point variations, on each class. These are used to compute your score. The purpose of this assignment sheet is to give you practice in computing placing scores.

Use the Information Sheet, Section XII, to assist you with the problems below.

- A. Class 2, Jersey heifers. Official placings are 4 - 2 - 1 - 3 with cuts of 5, 4, 2. You placed the class 1 - 4 - 3 - 2; what is your correct score?

Your score = _____

- B. Class 1, Holstein aged cows. Official placings are 1 - 3 - 4 - 2 with cuts of 5, 5, 5. You placed the class 3 - 1 - 2 - 4; what is your correct score?

Your score = _____

ASSIGNMENT SHEET #8

- C. Class 3, Ayrshire heifers. Official placings are 4 - 3 - 1 - 2 with cuts of 3, 4, 2. You placed the class 3 - 4 - 1 - 2; what is your correct score?

Your score = _____

- D. Class 4, Guernsey heifers. Official placings are 1 - 3 - 2 - 4 with cuts of 4, 4, 4. You placed the class 1 - 2 - 4 - 3; what is your correct score?

Your score = _____

DAIRY BREEDS AND SELECTION
UNIT VASSIGNMENT SHEET #9 — EVALUATE A SET OF WRITTEN REASONS
FOR PLACING A CLASS OF DAIRY CATTLE

NAME _____

SCORE _____

Reasons for placing a class of dairy cattle must be clear and must contain standard terminology.

Below is a set of written reasons for placing a class of Holstein cows. The first activity will help you see how terms for desirable and undesirable traits are used and how these terms are tied together. The second part of this assignment allows you to evaluate the placing reasons for clarity, correct style, and correctness.

Study how the person who wrote the reasons used the terms in order to identify strengths and weaknesses of the different animals in the class.

PART I

Circle the terms for desirable traits, and underline the terms for undesirable traits in the set of written reasons below.

HOLSTEIN COW REASONS

I placed this class of Holstein cows 3 - 4 - 1 - 2. I placed 3 over 4, considering this a rather easy placing because 3 shows more dairy character and general appearance. She has a longer and leaner neck, sharper in the withers, leaner in the thighs. She is stronger in her back and loin, more level from hips to pins, neater in her tail setting, and stands on a straighter pair of rear legs. She is deeper in the chest and has more balance to the udder with a more even teat placement.

However, I would grant that 4 is deeper in the rear rib with a higher and wider rear-udder attachment. I would like to see my top cow, 3, with more stretch and length of barrel.

In my middle pair 4 goes over 1, and I considered this an easy placing. Four excels 1 in body capacity and mammary system being deeper in her rear rib, more spread of rib. Her udder extends higher and stronger in rear-udder attachment, more rear udder development, with a neater teat placement. I grant that 1 stands on a straighter pair of rear legs that are stronger in the pasterns.

In my bottom pair, I placed 1 over 2. I considered this a very close placing; but 1 has more general appearance than 2, having more style and balance, more breed character in her head and neck, and she stands on a straighter pair of rear legs. One is a sharper cow than 2 and has more dairy character, being sharper in the withers, leaner in the neck, and wider in the ribs.

I grant that 2 has more body capacity, having a greater spring and spread of rib and being deeper in both the chest and rear ribs; but I placed her last because she lacks the overall balance of 1. She is thick in her neck, and her udder is unbalanced with weak fore and rear udder attachments. Therefore, I leave my placings 3 - 4 - 1 - 2.

ASSIGNMENT SHEET #9

PART II

Evaluate the placing reasons in Part I by answering the following questions.

- A. Are the reasons written in a clear, concise manner? ☐ Yes ☐ No
- B. Did the reasons convince you that the class was placed correctly? ☐ Yes ☐ No

Justify your answer. _____

- C. Did the writer use correct terms for desirable and undesirable traits? ☐ Yes ☐ No
- D. Did you find any terms for desirable and undesirable traits that lacked meaning or purpose? ☐ Yes ☐ No

If so, name these terms.

- E. Would you make changes in any of the placing reasons? ☐ Yes ☐ No

Write your changes.

- F. Could the placing reasons be given in less than two minutes? ☐ Yes ☐ No

- G. Would the reason-taker be able to identify the cows from the reasons given? ☐ Yes ☐ No

Why or why not? _____

DAIRY BREEDS AND SELECTION
UNIT VASSIGNMENT SHEET #10 — JUDGE A PRODUCTION CLASS
OF DAIRY CATTLE

NAME _____ SCORE _____

The purpose of this assignment is to give you practice judging a production class of dairy cattle. The instructor or a junior or senior vocational agriculture student has already placed the officials on the class.

Judge the class that has been set up for you. Use the space below to write notes on the class.

Class Name _____ Placings _____

1. _____

2. _____

3. _____

4. _____

DAIRY BREEDS AND SELECTION
UNIT VASSIGNMENT SHEET #11 — JUDGE AN OPEN HEIFER CLASS
OF DAIRY CATTLE

NAME _____ SCORE _____

This assignment will give you practice judging an open heifer class. The instructor or a junior or senior vocational agriculture student has already placed the officials on the class.

Judge the class that has been set up for you. Use the space below for taking notes on the class.

Class Name _____ Placings _____

1. _____

2. _____

3. _____

4. _____

DAIRY BREEDS AND SELECTION

UNIT V

ASSIGNMENT SHEET #12 — WRITE A SET OF REASONS FOR
PLACING A CLASS OF DAIRY CATTLE

NAME _____ SCORE _____

In Assignment Sheets #10 and #11, you judged two dairy classes and took notes on each class. Use the space below and on the back of this page to write your reasons for placing one of these classes. Be sure to identify the class.

After you have finished writing your reasons, review them. Are your reasons convincing? Do your reasons separate the animals one from the other? Do your reasons separate your top placing from your bottom placing? Did you use appropriate judging terms and tie the terms into phrases?

Class Name _____ Placings _____

[illegible]

DAIRY BREEDS AND SELECTION
UNIT VASSIGNMENT SHEET #13 — GIVE A SET OF ORAL REASONS
FOR PLACING A CLASS OF DAIRY CATTLE

NAME _____ SCORE _____

Giving oral reasons for placings is one of the most important things you can learn to do in your vocational agriculture class. Use your written reasons from Assignment Sheet #12 and be prepared to give the reasons to your instructor or an upperclass member. To help you prepare to give the reasons for your placings, complete the following information.

- A. For what class are you giving the reasons? _____
- B. How did you place the class? _____
- C. What is your opening statement? _____

- D. Have you studied the reasons, and can you present them without using your notes? _____

- E. What is your closing statement? _____

Review Sections XV and XVI in the Information Sheet; then give your reasons orally to the instructor or a junior or senior student.

DAIRY BREEDS AND SELECTION
UNIT VASSIGNMENT SHEET #14 — USE RESOURCE MATERIALS TO LOCATE INFORMATION
ABOUT A BREED OF DAIRY CATTLE

NAME _____ SCORE _____

Selecting a dairy cattle breed is an individual choice. The different breed associations and the members within those associations have worked extra hard to improve their breed. They publish information in the form of newsletters and breed journals. A person desiring to select a dairy breed should spend time studying the different breeds and then make a decision. The purpose of this assignment is to give you the opportunity to conduct research on a selected breed's background and characteristics, and other research that has been done by the respective breed associations.

The following information should be of assistance to you while conducting your research.

- Technical information received from the different breed associations
- Breed magazines and journals
- Textbooks:

Modern Breeds of Livestock by Hilton M. Briggs and Dinus M. Briggs, Macmillan Publishing Co., Inc., New York, 1980.

Dairy Production by Ronald V. Diggins, Clarence E. Bundy, and Virgil W. Christensen, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1979.

Answer the following questions about the breed that you have selected for your research.

Breed _____

A. Where did the breed originate? _____

B. What is the color pattern? _____

C. What are considered to be the strong points of the breed?

D. What are considered to be the weak points of the breed? _____

ASSIGNMENT SHEET #14

- E. What is the name of the breed association? _____
- F. When was the breed association formed? _____
- G. What is the address of the breed association? _____

- H. How many animals have been recorded in the breed association?

- I. Does the breed association publish a newsletter, journal, or magazine?
Yes _____ No _____ If yes, what is the name of the newsletter, journal, or magazine?

- J. What is the average amount of milk produced in a lactation period?

- K. What is the percent of butterfat? _____
- L. Is the breed considered to be a large, medium, or small-sized breed?

- M. What type of disposition does the breed have? _____
- N. What are the average weights of the cows and bulls?
Cows — _____ Bulls — _____
- O. What type of conformation does the breed have? _____

- P. Is the breed considered to have good grazing ability? Yes _____ No _____
- Q. Does the breed association conduct tests and research? Yes _____ No _____
If yes, name the organization responsible for conducting the tests and research. _____

- R. What is the average weight of the calves at birth? _____

ASSIGNMENT SHEET #14

- S. Name an outstanding producing cow and include information about her.

Cow's name _____ Information _____

- T. What is your opinion of the breed? _____

- U. If you were going into the dairy business, would you select this breed?

Yes _____ No _____

Justify your answer.

DAIRY BREEDS AND SELECTION
UNIT V

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

- A. Ayrshire
- E. Jersey
- C. Brown Swiss
- D. Guernsey
- E. Holstein

Assignment Sheet #2

- | | |
|----------------------|---------------------------|
| A. Heel | Q. Heart girth |
| B. Sole | R. Withers |
| C. Knee | S. Crops |
| D. Chest floor | T. Ribs |
| E. Brisket | U. Chine |
| F. Point of elbow | V. Loin |
| G. Dewlap | W. Barrel |
| H. Point of shoulder | X. Hip |
| I. Throat | Y. Rump |
| J. Jaw | Z. Thurl |
| K. Muzzle | AA. Tailhead |
| L. Bridge of nose | BB. Pin bones |
| M. Forehead | CC. Tail |
| N. Poll | DD. Rear udder attachment |
| O. Horn | EE. Thigh |
| P. Neck | FF. Stifle |

ANSWERS TO ASSIGNMENT SHEETS

GG. Flank

MM. Hoof

HH. Rear udder

NN. Teats

II. Hock

OO. Fore udder

JJ. Switch

PP. Fore udder attachment

KK. Dewclaw

QQ. Mammary veins

LL. Pastern

RR. Milk wells

Assignment Sheet #3

- A. Masculine head
- B. Narrow in the thurls
- C. Rough over the rump
- D. Stands squarely on the legs
- E. Shows evidence of lameness
- F. Shoulders tied in roughly with body
- G. More strength in the loin
- H. Narrow in the pins
- I. Crooked rear legs
- J. Less dairy-like
- K. Snallow-ribbed
- L. More open rib
- M. Sharper in hips and pins
- N. Thinner in the thighs
- O. Thick and rough

ANSWERS TO ASSIGNMENT SHEETS

- P. Shallow in the foreribs
- Q. Narrow-ribbed cow
- R. Deeper in the heart
- S. Longer in the body
- T. Shallow in the flank
- U. Showing greater arch to the rear rib
- V. Small, shallow udder
- W. Teats poorly spaced
- X. Poor quality and texture
- Y. Teats of uniform size
- Z. Teats more squarely placed
- AA. Tilted udder
- BB. Smoother (or stronger) in the fore udder attachment

Assignment Sheet #4

- A. Chest and body (considering age and stage of lactation)
 - 1. b
 - 2. c
 - 3. a
- B. Dairy character (independent of performance)
 - 1. a
 - 2. c
 - 3. b
- C. Foot shape (angle)
 - 1. b

ANSWERS TO ASSIGNMENT SHEETS

2. a

3. c

D. Rear legs (side view)

1. c

2. b

3. a

E. Pelvic angle

1. a

2. c

3. b

F. Rump width

1. c

2. a

3. b

G. Fore udder attachment

1. c

2. b

3. a

H. Rear udder width (at attachment)

1. c

2. a

3. b

ANSWERS TO ASSIGNMENT SHEETS

I. Rear udder height (at attachment)

1. a
2. c
3. b

J. Teat placement (rear view)

1. c
2. b
3. a

K. Suspensory ligament (cleft)

1. a
2. b
3. c

L. Udder depth (relative to point of hock)

1. b
2. c
3. a

Assignment Sheet #5

A. Desirable

Undesirable

Head lacks breed character
Poor body capacity
Tilted udder
Short fore udder, weak rear udder
Thick withers and thighs

B. Desirable

Undesirable

Sharp and free of fat
Barrel long and deep

Somewhat rough over rump
Udder could be stronger in rear

ANSWERS TO ASSIGNMENT SHEETS

C. **Desirable**

Good breed character
Long, deep body
Sharp
Shows high production

Undesirable

Throaty
Udder extremely weak
Floor of udder below the hock
Weak on hind legs
Too low on the ground
Rough over the rump

D. **Desirable**

Good dairy breed character of head and neck

Straight — Excellent depth and length of body

Undesirable

Udder lacks shape and should tie in higher in the rear

Udder U-shaped

E. **Desirable****Undesirable**

Lacks body depth and length
Poor dairy breed characteristics in head and neck
Bulge in fore udder
Poor shaped udder
Short body
Shallow body

F. **Desirable**

Excellent head
Ideal length neck
Straight in top line
Deep in body, both fore and rear
Strong, good shape udder
Perfect feet and legs
Good dairy character

Undesirable

Assignment Sheet #6

A. Class #1 — Jersey cows

	1	2	3	4
GA 35 pts.	35	30	10	13
DC 20 pts.	20	15	5	12
BC 10 pts.	10	9	5	8
U 35 pts.	35	30	10	17
Totals	100	84	30	50

Placing 1 - 2 - 4 - 3

Cuts 2, 4, 5

ANSWERS TO ASSIGNMENT SHEETS

B. Class #2 — Holstein cows

	1	2	3	4
GA 35 pts.	15	32	5	30
DC 20 pts.	15	20	5	20
BC 10 pts.	8	10	5	10
U 35 pts.	15	30	5	34
Totals	53	92	20	94

Placing 4-2-1-3

Cuts 3, 4, 5

Assignment Sheet #7

A.

FFA PLACING CARD

Contestant's Initial _____ No. 86-13

Class Holstein Aged Cows

1-2-3-4	
1-2-4-3	
1-3-2-4	
1-3-4-2	
1-4-2-3	
1-4-3-2	
2-1-3-4	
2-1-4-3	
2-3-1-4	
2-3-4-1	X
2-4-1-3	
2-4-3-1	
3-1-2-4	
3-1-4-2	
3-2-1-4	
3-2-4-1	
3-4-1-2	
3-4-2-1	
4-1-2-3	
4-1-3-2	
4-2-1-3	
4-2-3-1	
4-3-1-2	
4-3-2-1	

Placing Grade _____

Reason Grade _____

B.

FFA PLACING CARD

Contestant's Initial _____ No. 83-C

Class Jersey heifers

1-2-3-4	
1-2-4-3	
1-3-2-4	
1-3-4-2	
1-4-2-3	
1-4-3-2	
2-1-3-4	
2-1-4-3	
2-3-1-4	
2-3-4-1	
2-4-1-3	
2-4-3-1	
3-1-2-4	
3-1-4-2	
3-2-1-4	
3-2-4-1	
3-4-1-2	
3-4-2-1	
4-1-2-3	
4-1-3-2	
4-2-1-3	
4-2-3-1	
4-3-1-2	
4-3-2-1	X

Placing Grade _____

Reason Grade _____

ANSWERS TO ASSIGNMENT SHEETS

C.

FFA PLACING CARD		Contestant's Initial	No. <u>75-D</u>	
		Class <u>Brown Swiss Aged Cows</u>		
Placing Grade				
Reason Grade				

1-2-3-4	
1-2-4-3	
1-3-2-4	
1-3-4-2	
1-4-2-3	
1-4-3-2	
2-1-3-4	
2-1-4-3	X
2-3-1-4	
2-3-4-1	
2-4-1-3	
2-4-3-1	
3-1-2-4	
3-1-4-2	
3-2-1-4	
3-2-4-1	
3-4-1-2	
3-4-2-1	
4-1-2-3	
4-1-3-2	
4-2-1-3	
4-2-3-1	
4-3-1-2	
4-3-2-1	

Assignment Sheet #8

- A. 31
 B. 40
 C. 47
 D. 38

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #9

PART I

I placed this class of Holstein cows 3 - 4 - 1 - 2. I placed 3 over 4, considering this a rather easy placing because 3 (shows more dairy character and general appearance). She has a (longer and leaner neck) (sharper in the withers) (leaner in the thighs). She is (stronger in her back and loin), more (level from hips to pins) (neater in her tail setting) and (stands on a straighter pair of rear legs). She is (deeper in the chest) and has (more balance to the udder with a more even teat placement).

However, I would grant that 4 is (deeper in the rear rib) with a (higher and wider rear-udder attachment). I would like to see my top cow, 3, with (more stretch and length of barrel).

In my middle pair 4 goes over 1, and I considered this an easy placing. Four excels 1 in (body capacity) and (mammary system) being (deeper in her rear rib) (more spread of rib). Her (udder extends higher and stronger in rear-udder attachment, more rear udder development), with a (neater teat placement). I grant that 1 (stands on a straighter pair of rear legs) that are (stronger in the pasterns).

In my bottom pair, I placed 1 over 2. I considered this a very close placing; but 1 has more (general appearance) than 2, (having more style and balance) (more breed character in her head and neck) and she (stands on a straighter pair of rear legs). One is a sharper cow than 2 and has more (dairy character, being sharper in the withers) (leaner in the neck) and (wider in the ribs).

I grant that 2 has (more body capacity) having a (greater spring and spread of rib) and being (deeper in both the chest and rear ribs), but I placed her last because she (lacks the overall balance) of 1. She is (thick in her neck), and her (udder is unbalanced with weak fore and rear udder attachments). Therefore, I leave my placings 3 - 4 - 1 - 2.

PART II — Evaluated to the satisfaction of the instructor

(NOTE: The following are suggestions for evaluating student responses.)

- A. Were the student's responses correct?
- B. Did the student find any desirable and undesirable terms that lack meaning and purpose?
- C. Did the student suggest that changes should be made in the reasons?
- D. Could the reasons be given in less than two minutes?

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #10 — Evaluated to the satisfaction of the instructor

(NOTE: The following are suggestions for evaluating student responses.)

- A. Did the student place the class correctly?
- B. Did the student use proper phrases in taking notes on the placings?

Assignment Sheet #11 — Evaluated to the satisfaction of the instructor

(NOTE: The following are suggestions for evaluating student responses.)

- A. Did the student place the class correctly?
- B. Did the student use terms for desirable and undesirable traits in writing notes on the class?

Assignment Sheet #12 — Evaluated to the satisfaction of the instructor

(NOTE: The following are suggestions for evaluating student responses.)

- A. Did the student place the class correctly?
- B. What was the student's score on the placing?
- C. Were the reasons written correctly?
- D. Were the reasons convincing?

Assignment Sheet #13 — Evaluated to the satisfaction of the instructor

(NOTE: The following criteria are suggestions for evaluating student responses.)

- A. Did the student speak with an appropriate voice?
- B. Were the reasons convincing?
- C. Were the reasons presented in less than two minutes?
- D. Did the student look you in the eye?

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #14 — Evaluated to the satisfaction of the instructor.

(NOTE: The following are suggestions for evaluating student responses.)

- A. Were the questions answered correctly?

(NOTE: Instructor will need to check answers with resource materials.)

- B. Did the student use a variety of resources to answer the questions?

**DAIRY BREEDS AND SELECTION
UNIT V**

TEST

NAME _____

SCORE _____

1. Match to their correct definitions terms associated with dairy cattle breeds and selection. Write the correct numbers in the blanks. Definitions are continued on the next page.

- | | | |
|---------|--|--|
| _____a. | Lines of the dairy cow's body | 1. Milk production |
| _____b. | Mature female dairy animal; shows evidence of having produced one or more calves | 2. Butterfat |
| _____c. | Defect that is undesirable | 3. Disposition |
| _____d. | Female dairy animal that has not borne an offspring | 4. Cow |
| _____e. | Parts of the cow directly responsible for producing and storing milk | 5. Helper |
| _____f. | Cow showing signs of pregnancy | 6. Springer |
| _____g. | Register of lines of ancestors | 7. Bull |
| _____h. | Statement that means that the animal cannot be registered, or in the show ring, is not eligible to win a prize | 8. Calf |
| _____i. | Mature male dairy animal | 9. Lactation period |
| _____j. | Production records kept on producing dairy cattle | 10. Breed characteristics |
| _____k. | Span of time that a cow is giving milk | 11. Body capacity |
| _____l. | Male or female dairy animal under one year of age | 12. Mammary system |
| _____m. | Physical traits that differentiate one breed from another | 13. Dairy character |
| _____n. | Size of barrel and heart girth indicating an animal's ability to consume large amounts of feed | 14. Dairy wedge |
| _____o. | Manner in which an animal acts | 15. Discrimination |
| _____p. | Combination of characteristics that indicate a cow's ability to convert feed to milk | 16. Disqualification |
| _____q. | Amount in pounds of milk that a cow produces during a lactation period | 17. Pedigree |
| _____r. | Percent of fat in the milk | 18. Dairy herd improvement (DHI) records |

TEST

2. Identify major breeds of dairy cattle. Write the correct name in the blank below each picture.

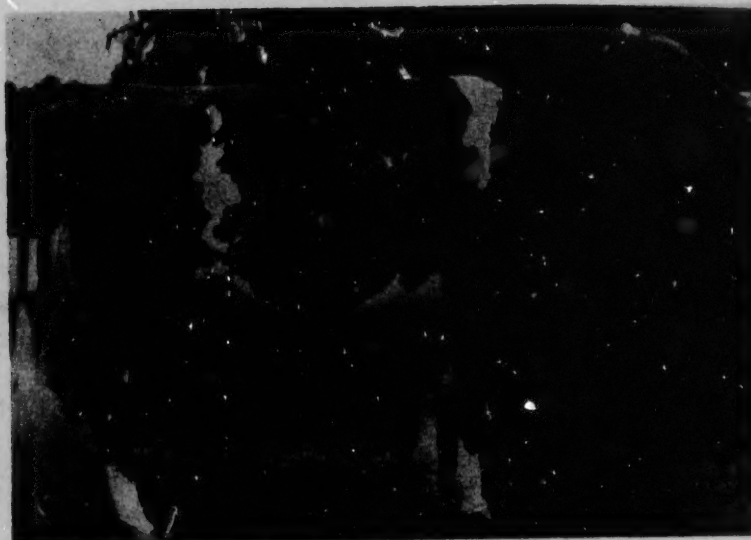


a. _____



b. _____

TEST



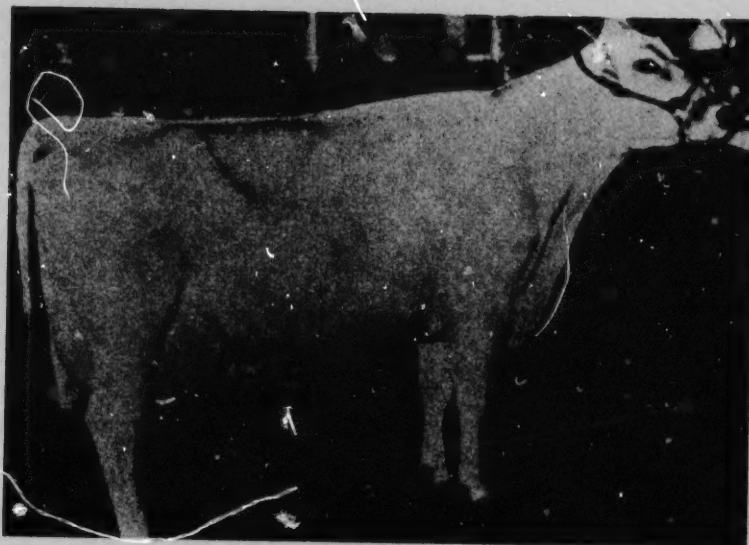
c.



d.

600-D

TEST

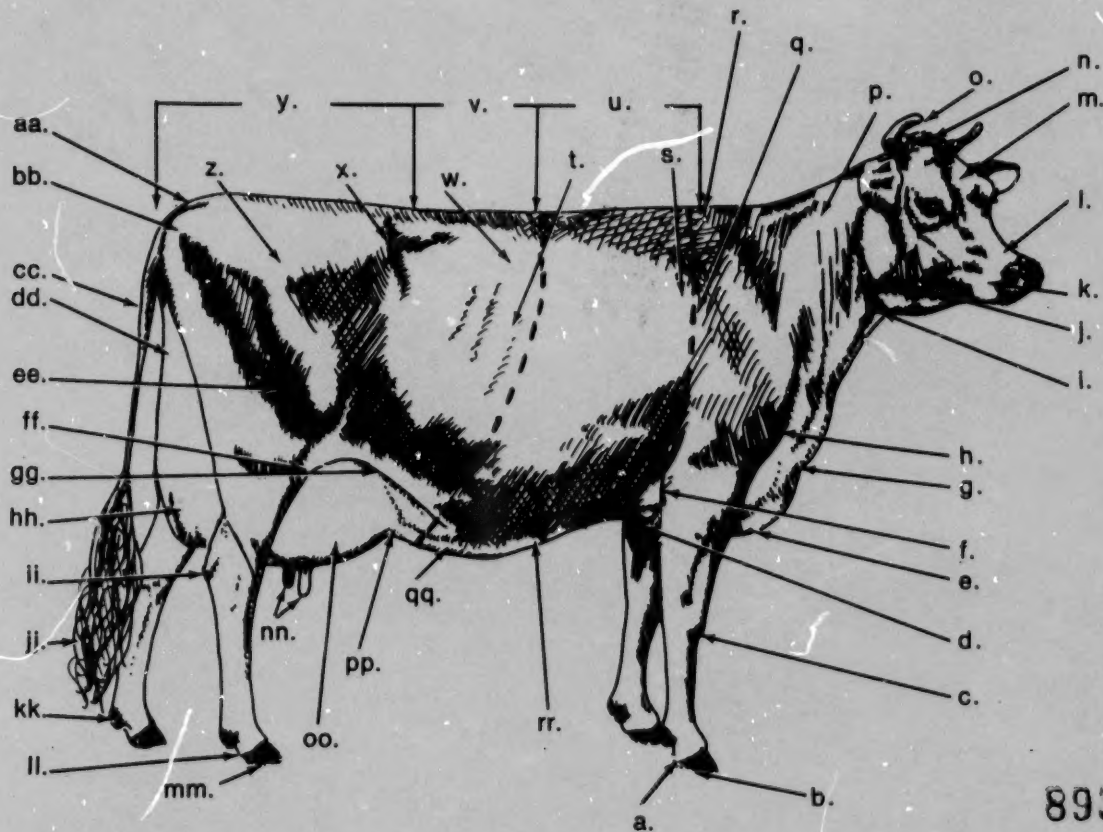


e.

891

TEST

3. Label the parts of the dairy cow illustrated below. Write the correct names in the blanks on the following page.



892

893

TEST

a.	_____	w.	_____
b.	_____	x.	_____
c.	_____	y.	_____
d.	_____	z.	_____
e.	_____	aa.	_____
f.	_____	bb.	_____
g.	_____	cc.	_____
h.	_____	dd.	_____
i.	_____	ee.	_____
j.	_____	ff.	_____
k.	_____	gg.	_____
l.	_____	hh.	_____
m.	_____	ii.	_____
n.	_____	jj.	_____
o.	_____	kk.	_____
p.	_____	ll.	_____
q.	_____	mm.	_____
r.	_____	nn.	_____
s.	_____	oo.	_____
t.	_____	pp.	_____
u.	_____	qq.	_____
v.	_____	rr.	_____

TEST

4. Match breeds of dairy cattle to their average ranges of yearly production. Write the correct numbers in the blanks. Answers may be used more than once.

National

- | | | |
|----------|------------------------------|----------------|
| _____ a. | 10,000 to 11,000 pounds milk | 1. Holstein |
| _____ b. | 11,100 to 12,000 pounds milk | 2. Ayrshire |
| _____ c. | 12,100 to 13,000 pounds milk | 3. Jersey |
| _____ d. | 15,000 to 16,000 pounds milk | 4. Brown Swiss |
| _____ e. | 3.50 to 3.90% butterfat | 5. Guernsey |
| _____ f. | 3.91 to 4.00% butterfat | |
| _____ g. | 4.01 to 4.10% butterfat | |
| _____ h. | 4.11 to 4.75% butterfat | |
| _____ i. | 4.80 to 5.00% butterfat | |
| _____ j. | 475 to 505 pounds butterfat | |
| _____ k. | 506 to 530 pounds butterfat | |
| _____ l. | 531 to 565 pounds butterfat | |

State

- | | |
|----------|------------------------------|
| _____ a. | 10,500 to 11,000 pounds milk |
| _____ b. | 11,000 to 12,000 pounds milk |
| _____ c. | 12,000 to 13,000 pounds milk |
| _____ d. | 14,000 to 14,500 pounds milk |
| _____ e. | 3.50 to 3.75% butterfat |
| _____ f. | 3.76 to 4.00% butterfat |
| _____ g. | 4.50 to 5.00% butterfat |
| _____ h. | 475 to 500 pounds butterfat |
| _____ i. | 505 to 550 pounds butterfat |

TEST

5. Define *dairy judging*. _____

6. Match terms associated with dairy cattle judging to their correct definitions. Write the correct numbers in the blanks.

- | | | |
|---------|---|------------------------|
| _____a. | Rear legs turned so that hocks are close together and feet point out when viewed from the rear | 1. Quality |
| _____b. | Combination of characteristics that make an animal most useful for a specific purpose | 2. Sickle-hocked |
| _____c. | Rear legs too curved when viewed from the side | 3. Balance of symmetry |
| _____d. | Proper proportions and blending of parts | 4. Cow-hocked |
| _____e. | Rear legs too straight when viewed from the side | 5. Type |
| _____f. | Overall smoothness, blending of shoulders, and refinement of head and bone | 6. Spring of rib |
| _____g. | Amount ribs arch out from the backbone | 7. Soundness |
| _____h. | Quality of being correct on the feet and legs | 8. Post-legged |
| _____i. | Size of animal as determined by skeletal structure | 9. Masculinity |
| _____j. | Free from fat | 10. Femininity |
| _____k. | Traits that distinguish one breed from another | 11. Clean |
| _____l. | Traits distinguishing a female from a male | 12. Breed character |
| _____m. | Traits distinguishing a male from a female | 13. Scale |
| _____n. | Recognition that an animal has desirable traits but that those traits are not acceptable to be used any higher in the class | 14. Grant |

TEST

7. Distinguish between dairy cattle judging terms for desirable and undesirable traits. Write an "X" in the blank before each desirable trait.

- ____a. Small, shallow udder
- ____b. Teats of uniform size
- ____c. Showing more quality and texture
- ____d. Poor quality and texture
- ____e. More spring to the foreribs
- ____f. Deeper in the heart
- ____g. Short-bodied
- ____h. Shallow in the flank
- ____i. More open rib
- ____j. More dairy-like
- ____k. More milky appearance
- ____l. Thicker in the thighs
- ____m. Carrying excess flesh
- ____n. Rough in hips and pins

8. List six traits classified by the dairy type evaluation system.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____

TEST

9. Select from the following list factors to consider in selecting dairy cattle. Write an "X" in the blank before each correct answer.

- ____ a. Body capacity
- ____ b. Birth weight
- ____ c. Dairy character
- ____ d. Udder
- ____ e. Feed conversion
- ____ f. General appearance

10. Explain the purpose of the Dairy Cow Unified Score Card.

11. State the purpose of the FFA placing card.

12. Compute placing scores by working the following problems.

- a. You judged a class of aged production cows. The official placings were 3 - 1 - 4 - 2 with cuts of 4, 4, 5. You placed the class 2 - 3 - 4 - 1. What is your score?

Your score = _____

TEST

- b. You judged a class of springer helpers. The official placings were 1 - 2 - 4 - 3 with cuts of 5, 5, 5. You placed the class 1 - 4 - 3 - 2. What is your score?

Your score = _____

13. State the purpose of giving reasons for placings. _____

14. Arrange in order the steps to follow in taking notes for oral reasons for placings. Write a "1" in the blank before the first step, a "2" before the second step, and so on.

- ____ a. Write your placing at the top of the page
 ____ b. Take notes on each animal to identify strong points and criticisms of each
 ____ c. Identify the class
 ____ d. Write the numbers 1 through 4 down the side of the page, leaving approximately three lines between the numbers
 ____ e. Take notes by pairs, giving advantages as well as grants

15. Select from the following list techniques for presenting oral reasons for placings. Write an "X" in the blank before each correct answer.

- ____ a. Speak with a clear, powerful voice
 ____ b. Use five terms in succession
 ____ c. Carry notes into the reason room
 ____ d. Open reasons with a precise opening statement
 ____ e. Use more than 2 minutes to give reasons

TEST

- ____f. Stand 4 to 8 feet away from the reason-taker
 - ____g. Avoid body movement
 - ____h. Look reason-taker squarely in the eye
 - ____i. Talk in a firm voice
 - ____j. Conclude reasons with "For these reasons I placed this class . . ."
 - ____k. Present reason-taker with an accurate picture of animal
 - ____l. Stand erect, with feet and shoulders aligned
 - ____m. Use identification characteristics whenever possible to let the reason-taker know that you saw the class
 - ____n. Use good voice control, both in speed and volume, to emphasize certain points
16. Arrange in order steps to follow in presenting oral reasons for placings. Write a "1" in the blank before the first step, a "2" before the second step, and so on.
- ____a. Discuss top pair
 - ____b. Present opening statement
 - ____c. Discuss middle pair
 - ____d. Discuss bottom pair

(NOTE: Test questions 17-25 list assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

- 17. Use the dairy type evaluation system.
- 18. Evaluate animals, using the Dairy Cow Unified Score Card criteria.
- 19. Judge classes of cows, using point system from Dairy Cow Unified Score Card.
- 20. Evaluate a set of written reasons for placing a class of dairy cattle.
- 21. Judge a production class of dairy cattle.
- 22. Judge an open heifer class of dairy cattle.
- 23. Write a set of reasons for placing a class of dairy cattle.
- 24. Give a set of oral reasons for placing a class of dairy cattle.
- 25. Use resource materials to locate information about a breed of dairy cattle.

DAIRY BREEDS AND SELECTION UNIT V

ANSWERS TO TEST

1.

a.	14	j.	18
b.	4	k.	9
c.	15	l.	8
d.	5	m.	10
e.	12	n.	11
f.	6	o.	3
g.	17	p.	13
h.	16	q.	1
i.	7	r.	2

2.

a.	Jersey
b.	Holstein
c.	Guernsey
d.	Ayrshire
e.	Brown Swiss

3.

a.	Heel	i.	Throat	q.	Heart girth
b.	Sole	j.	Jaw	r.	Withers
c.	Knee	k.	Muzzle	s.	Crops
d.	Chest floor	l.	Bridge of nose	t.	Ribs
e.	Brisket	m.	Forehead	u.	Chine
f.	Point of elbow	n.	Poll	v.	Loin
g.	Dewlap	o.	Horn	w.	Barrel
h.	Point of shoulder	p.	Neck	x.	Hip

ANSWERS TO TEST

y. Rump	ee. Thigh	ll. Pastern
z. Thurl	ff. Stifle	mm. Hoof
aa. Tailhead	gg. Flank	nn. Teats
bb. Pin bones	hh. Rear udder	oo. Fore udder
cc. Tail	ii. Hock	pp. Fore udder attachment
dd. Rear udder attachment	jj. Switch	qq. Mammary veins
	kk. Dewclaw	rr. Milk wells

4. National Averages

a. 3	g. 4
b. 5	h. 5
c. 2, 4	i. 3
d. 1	j. 2
e. 1	k. 3,4,5
f. 2	l. 1

State Averages

a. 3	f. 2, 4
b. 5	g. 3, 5
c. 2, 4	h. 2, 4
d. 1	i. 1, 3, 5
e. 1	

5. Process of carefully analyzing a dairy animal's individual traits and comparing those traits to an ideal animal or standard

ANSWERS TO TEST

6. a. 4 h. 7
 b. 5 i. 13
 c. 2 j. 11
 d. 3 k. 12
 e. 8 l. 10
 f. 1 m. 9
 g. 6 n. 14

7. b, c, e, f, i, j, k

8. Answer should include any six of the following

- a. Stature (measured at withers)
- b. Chest and body (considering age and stage of lactation)
- c. Dairy character (independent of performance)
- d. Foot shape (angle)
- e. Rear legs (side view)
- f. Pelvic angle
- g. Rump width
- h. Fore udder attachment
- i. Rear udder width (at attachment)
- j. Rear udder height (at attachment)
- k. Teat placement (rear view)
- l. Suspensory ligament (cleft)
- m. Udder depth (relative to point of hock)

9. a, c, d, f

ANSWERS TO TEST

10. To indicate the points or criteria to be considered in selecting dairy animals and the relative emphasis that should be given each point
11. To identify the judge and to record the placing
12. a. 19
b. 35
13. To present your opinion and justification for placing a class of livestock
14. a. 2
b. 4
c. 1
d. 3
e. 5
15. a, d, f, g, h, i, k, l, m, n
16. a. 2
b. 1
c. 3
d. 4
17. Evaluated to the satisfaction of the instructor
18. Evaluated to the satisfaction of the instructor
19. Evaluated to the satisfaction of the instructor
20. Evaluated to the satisfaction of the instructor

ANSWERS TO TEST

21. Evaluated to the satisfaction of the instructor
22. Evaluated to the satisfaction of the instructor
23. Evaluated to the satisfaction of the instructor
24. Evaluated to the satisfaction of the instructor
25. Evaluated to the satisfaction of the instructor

LIGHT HORSE BREEDS AND SELECTION UNIT VI

UNIT OBJECTIVE

After completing this unit, the student should be able to identify breeds of light horses, and to select and judge a halter class. The student will show this knowledge by completing assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with light horse breeds and selection.
2. Identify breeds of light horses.
3. Label the parts of a horse.
4. Match types of horses to their correct uses.
5. Label common head markings.
6. Label common leg markings.
7. Match body colors to their correct descriptions.
8. Match to their correct definitions terms associated with judging.
9. Describe general traits to consider in judging a halter class of light horses.
10. Select from a list specific traits or points to look for when judging light horses.
11. Label common conformational faults of feet and legs.
12. State the purpose of the FFA placing card.
13. Compute placing scores.
14. Write terms of comparison used in judging a halter class of light horses.
15. State guidelines for taking notes for oral reasons for placings.
16. Select from a list techniques for writing reasons for placings.

OBJECTIVE SHEET

17. Select from a list techniques for giving oral reasons for placings.
18. Evaluate two horses for comparable advantages.
19. Judge halter classes of light horses.
20. Write a set of reasons for placing a class of light horses.
21. Give a set of oral reasons for placing a class of light horses.
22. Use resource material to locate information related to the breed association, origin, color, and characteristics of a light horse breed.

LIGHT HORSE BREEDS AND SELECTION
UNIT VI

SUGGESTED ACTIVITIES

I. Unit contents

A. Objective sheet

B. Suggested activities

C. Transparency masters

1. TM #1 — Parts of a Horse
2. TM #2 — Locations of Head Markings
3. TM #3 — Head Markings
4. TM #4 — Dimensions of a Light Horse
5. TM #5 — Foot and Leg Conformation: Front View
6. TM #6 — Foot and Leg Conformation: Side View
7. TM #7 — Foot and Leg Conformation: Hind View

D. Information sheet

E. Assignment sheets

1. Assignment Sheet #1 — Identify Breeds of Light Horses
2. Assignment Sheet #2 — Label the Parts of a Horse
3. Assignment Sheet #3 — Label Common Head Markings
4. Assignment Sheet #4 — Label Common Leg Markings
5. Assignment Sheet #5 — Label Common Conformational Faults of Feet and Legs
6. Assignment Sheet #6 — Use FFA Placing Cards
7. Assignment Sheet #7 — Compute Placing Scores
8. Assignment Sheet #8 — Write Terms of Comparison Used in Judging a Halter Class of Light Horses
9. Assignment Sheet #9 — Evaluate Two Horses for Comparable Advantages

SUGGESTED ACTIVITIES

10. Assignment Sheet #10 — Judge Halter Classes of Light Horses
11. Assignment Sheet #11 — Write a Set of Reasons for Placing a Class of Light Horses
12. Assignment Sheet #12 — Give a Set of Oral Reasons for Placing a Class of Light Horses
13. Assignment Sheet #13 — Use Resource Material to Locate Information Related to the Breed Association, Origin, Color, and Characteristics of a Light Horse Breed

F. Answers to assignment sheets

G. Test

H. Answers to test

II. Instructor's guide

A. Obtain materials to supplement unit.

1. Films

- a. *From the Beginning*. Color, 24 minutes. Available from the American Quarter Horse Association, 2736 West 10th Street, Amarillo, Texas 79168. The film is available for loan or for purchase.
- b. *Survival of the Fittest*. Color, 25 minutes. Available from the American Quarter Horse Association, 2736 West 10th Street, Amarillo, Texas 79168. The film is available for loan or for purchase.

(NOTE: The American Quarter Horse Association has several other films that can be used with this unit. The films are available for loan or for purchase.)

- c. *The Arabian Horse*. Color, 25 minutes. Available from the Arabian Horse Registry of America, Inc., 3435 South Yosemite Street, Denver, Colorado 80231. The film is available for free loan.
- d. *The Sports Model: No Two Alike*. Color, 24 minutes. Available from the American Paint Horse Association, P.O. Box 18519, Fort Worth, Texas 76118.

SUGGESTED ACTIVITIES

2. Slides

- a. *Parts of a Horse*. Available from The American Paint Horse Association, P.O. Box 18519, Fort Worth, Texas 76118.
- b. *Judging — 1983 Houston Livestock Show and Rodeo*. Slides of 4 classes of horses. Available from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.
- c. *Judging — 1980 Houston Exposition*. Slides of one class of horses. Recommended for use in teaching procedures for judging. Available from State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.

3. Promotional material — Many of the breed associations have some excellent promotional materials that would be very useful in this unit. These materials may be ordered from the following associations:

- a. American Morgan Horse Association, Inc.
P.O. Box 1, Westmoreland, New York 13490
Wayne Hipsley, Exec. Sec., (315) 735-7522
Active Members 9,500
Registrations 4,872
Breed Publication: *The Morgan Horse*
- b. American Quarter Horse Association
2736 West 10th Street, Amarillo, Texas 79168
Ronald Blackwell, Exec. Sec., (806) 376-4811
Active Members 142,000
Registrations 155,401
Breed Publication: *The Quarter Horse Journal*
- c. American Paint Horse Association
Box 18519, Fort Worth, Texas 76118
Ed Roberts, Exec. Sec., (817) 439-3400
Active Members 10,836
Registrations 13,683
Breed Publication: *Paint Horse Journal*
- d. Appaloosa Horse Club, Inc.
Box 8403, Moscow, Idaho 83843
Eric R. Edmonson, Sec., (208) 882-5578
Active Members 24,742
Registrations 25,317
Breed Publication: *Appaloosa News*

SUGGESTED ACTIVITIES

- e. The Arabian Horse Registry of America, Inc.
3435 South Yosemite Street, Denver, Colorado 80231
Ralph F. Clark, Sec., (303) 750-5626
Active Members 16,500
Registrations 24,937
Breed Publication: *Registry News*
- f. Jockey Club
380 Madison Avenue
New York, New York 10017
(212) 355-6146
- 4. Judging Manual — *OSU Livestock Judging Manual* by Jarold Callahan. Available from the Oklahoma State University Bookstore, Student Union, Stillwater, Oklahoma 74078.

(NOTE: You should order enough of these manuals for each pair of students enrolled in the vocational agriculture class.)

- 5. Textbook — *Modern Breeds of Livestock* by Hilton M. Briggs and Dinus M. Briggs, Macmillan Publishing Co., Inc., New York.

(NOTE: This publication will be used by the students to complete Assignment Sheet #13. Order sufficient copies of this book so that students can work together in pairs.)

6. Pamphlets

- a. *Identifying the Arabian Horse*. Available, with an accompanying poster, from the Arabian Horse Registry of America, Inc., 3435 South Yosemite Street, Denver, Colorado 80231.

(NOTE: This excellent pamphlet and poster should be used by students when identifying face and leg markings.)

- b. *Breeder's Reference Guide*. Available from the American Quarter Horse Association, 2736 West 10th Street, Amarillo, Texas 79168; (806) 376-4811.

B. Make or obtain transparencies.

(NOTE: Transparencies are available for purchase from the Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)

C. Provide students with objective sheet.

- 1. Discuss unit and specific objectives.

SUGGESTED ACTIVITIES

2. Introduce unit by helping students focus on the importance of the horse industry to the state of Oklahoma.

SUGGESTIONS:

- Tell students that Oklahoma is first in the number of horses per unit of land area. Oklahoma ranks third nationally in its horse population, but first nationally in the number of horses per capita. The horse industry in Oklahoma employs over 50,000 people. There are presently one-half million horses in Oklahoma, and overall the horse industry contributes more than two billion dollars annually to the state's economy.
- Point out that many individuals have turned to the horse industry for recreation. In the early days the horse was a necessity: it was the primary means of transportation. Today many individuals are becoming horse enthusiasts; riding horses has become a favorite weekend pastime for many families. The Oklahoma Horseman's Association has over 8,500 members.
- Show the film, *From the Beginning*, which highlights the formation of the American Quarter Horse Association (AQHA) in 1940 as recalled by Robert Denhardt and J. Ernest Browning, the only living founders of the AQHA.

D. Provide students with information and assignment sheets.

E. Discuss information and assignment sheets.

(NOTE: This unit contains thirteen assignment sheets. The assignment sheets do not necessarily build upon each other, but they should be used in sequence.)

1. Make the terms in Section I of the information sheet meaningful by illustrating and/or demonstrating the meaning of each term as it is introduced.
2. Use Section II of the information sheet and Assignment Sheet #1 to assist the students in identifying light breeds of horses.
3. Use Information Sheet, Section III, Transparency #1, and Assignment Sheet #2 to help students identify the parts of a horse.

SUGGESTIONS:

- Place photographs of the different breeds on the bulletin board. Show the different body conformation of each breed and stress that the parts of a horse do not change from breed to breed.

SUGGESTED ACTIVITIES

- Show slides, *Parts of a Horse*.
 - Stress the importance of calling the parts of a horse by their correct names, because students will be required to judge a halter class of horses and to write and give a set of oral reasons for their placings on the class.
4. Use Section IV of the information sheet to help students learn the different uses for light horses.

SUGGESTION:

- Show the film, *Survival of the Fittest*.
5. Combine Information Sheet, Sections V and VI, Transparencies #2 and #3, and Assignment Sheets #3 and #4 to help students identify head and leg markings.

SUGGESTION:

- Place poster from the Arabian Horse Registry on the wall to illustrate the different head and leg markings. Stress the importance of using markings to describe and identify a particular animal within the class being judged.
6. Use Section VII of the information sheet to help students distinguish body colors.

SUGGESTIONS:

- Take color photographs of horses with the different body colors and show them to the class.
 - Use photographs received from the different breed associations to point out body colors.
 - Have students review trade journals and horse magazines to make a collection of pictures illustrating the different body colors.
 - Use *Breeder's Reference Guide*, available from the American Quarter Horse Association, to illustrate the different body colors.
7. Use Section VIII of Information Sheet to help students learn to use judging terms.

SUGGESTION:

- Use photographs received from the breed associations to illustrate the meanings and clarify the terms.

SUGGESTED ACTIVITIES

8. Combine Information Sheet, Sections IX and X, and Transparencies #4 through #7 to help students start preparing for judging halter classes of light horses. Use Transparency #4 to help illustrate the meaning of balance.

SUGGESTIONS:

- Stress to the students the importance of looking at the animals from all views. An animal might be extremely strong or good from the front view but be poor or unsound from the rear view.
- Ask a resource person who is an experienced halter judge to speak to the class and share with the class the techniques and the procedures used when judging.

9. Use Information Sheet, Section XI, Transparencies #5 through #7, and Assignment Sheet #5 to identify common conformational faults of feet and legs.

SUGGESTION:

- Stress to the students the importance of soundness to the horse industry. Tell students that an unsound horse is of little use to the industry because the conformational fault is transmitted through genetics to the offspring. If an injury caused the animal to be unsound, however, then the animal could be used for breeding purposes.

10. Combine Sections XII and XIII of the information sheet with Assignment Sheets #6 and #7 to help students learn to use FFA placing cards and to compute placing scores.

SUGGESTIONS:

- Stress to students the importance of marking the card correctly and making sure the student marks the correct card for the class being judged.
- Use chalkboard to work problems on computing placing scores.
- Tell students how cuts are established.

11. Use Section XIV of the information sheet and Assignment Sheet #8 to help students learn to use terms of comparison.

SUGGESTION:

- Have students study the terms to develop an understanding of their meaning and interpretation. Have a student call out a desirable comparison term and another student provide the undesirable term. Continue this activity until all students have had an opportunity to participate.

SUGGESTED ACTIVITIES

12. Use Section XV of the information sheet and Assignment Sheet #9 to help students learn to take notes for reasons for placings.

SUGGESTIONS:

- Point out how the use of short phrases and abbreviations in notes are the framework of the reasons.
 - Remind students that notes identify the animal as well as stress strong and weak points of the animal.
 - Stress with the students the importance of taking notes accurately.
13. Use Section XVI of the information sheet to help students learn to write reasons for placings.

SUGGESTIONS:

- Have students read a set of reasons for placings to learn how the reasons should be put together.
 - Stress to the students that a strong introductory statement is important and that the reasons should give a summary of each animal in the class as well as comparisons.
14. Combine Assignment Sheets #10 and #11 to help students learn to judge a class and to write reasons on that class.

SUGGESTIONS:

- Show the slide set, *Judging—1980 Houston Exposition*, and allow the students to judge the class. Have students take a set of notes on the class and write a set of reasons for their placings.
- Put together a halter class of light horses for the class to judge. Have upperclass members assist in putting together the class as well as placing the officials on the class. Make it an easy class to judge.
- Have one of the upperclass members give a set of oral reasons for placings on the class.

SUGGESTED ACTIVITIES

15. Use Information Sheet, Section XVII and Assignment Sheet #12 to help students give oral reasons for placings.

SUGGESTION:

- Each student should give a set of oral reasons for placings using the results of Assignment Sheets #10 and #11. Have an upper-class member serve as reason-taker.

16. Use Assignment Sheet #13, *Modern Breeds of Livestock*, and information received from the different breed associations to help students learn to use resource materials.

SUGGESTIONS:

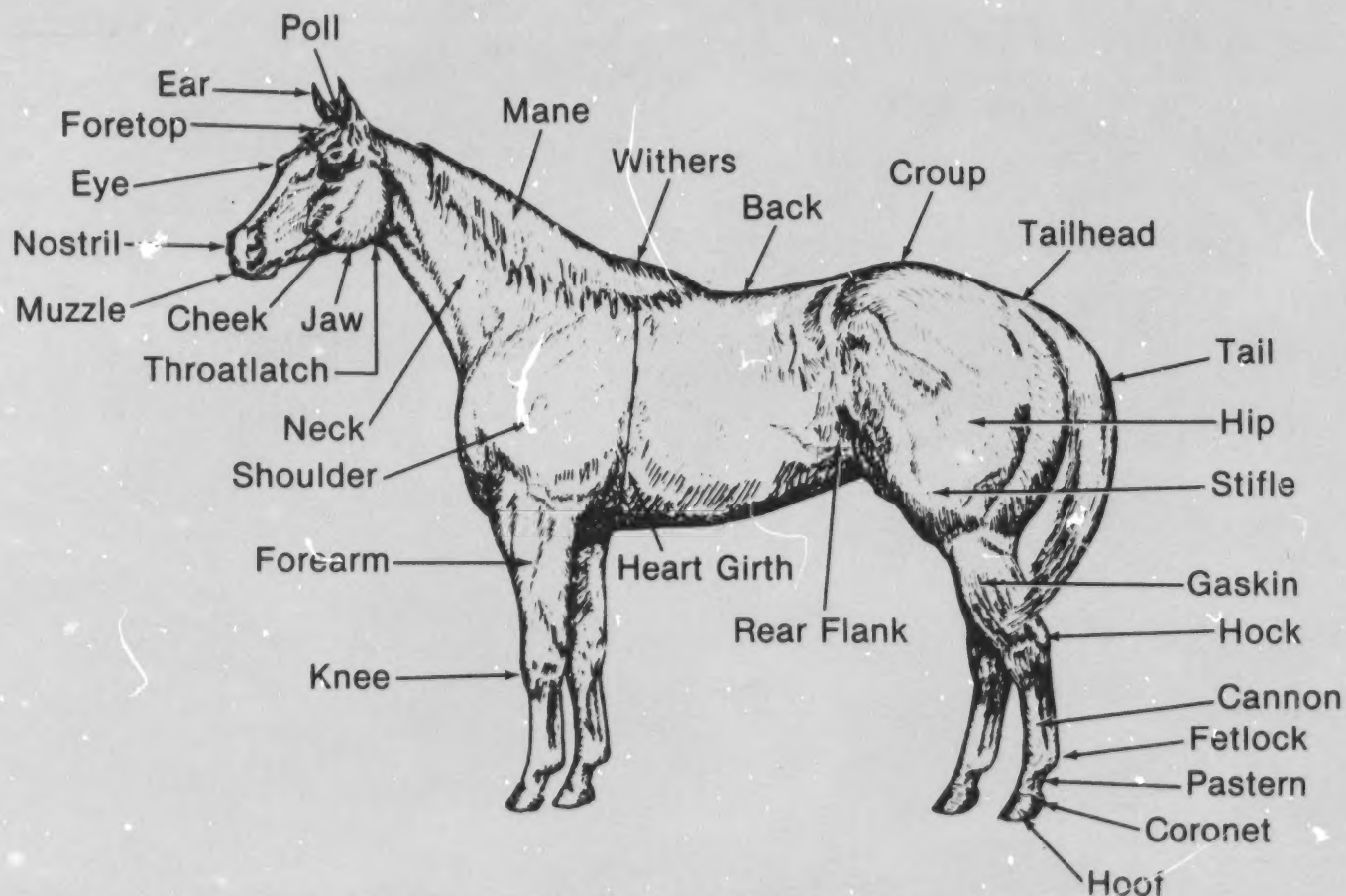
- Illustrate to the students how to use the different resource materials. Have each student conduct research on one breed.
- If time permits, have the students give oral reports using the results of their findings. Giving oral reports provides opportunities for students to stand on their feet while sharing the variety of information discovered in their research.

F. Give test.

III. Unit references

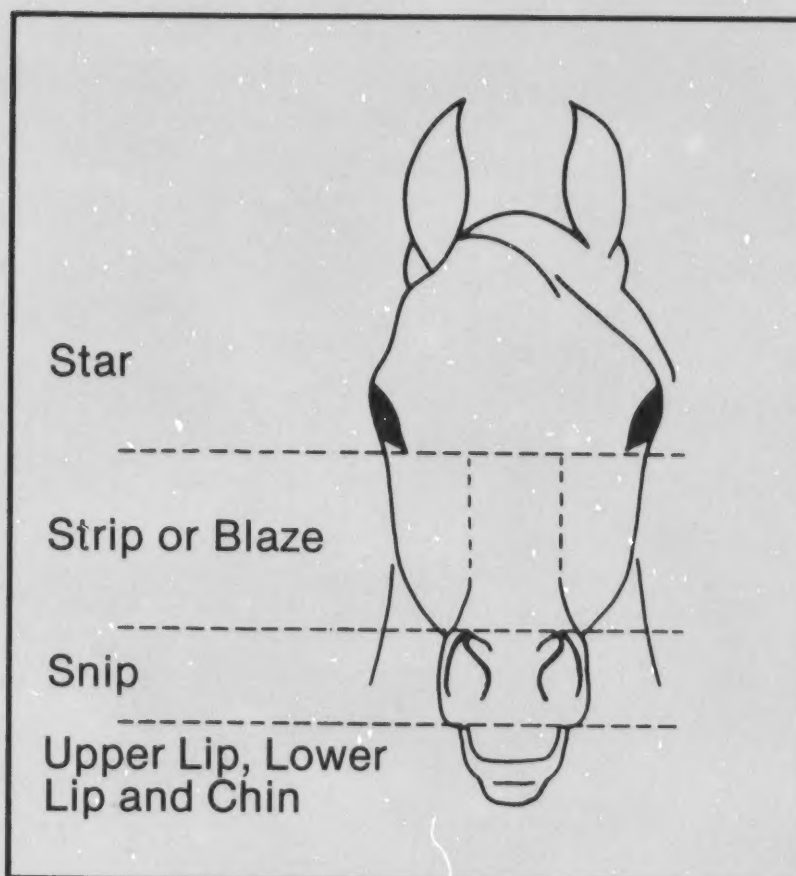
- A. *Breeder's Reference Guide*. Amarillo, Texas: American Quarter Horse Association, 1983.
- B. Briggs, Hilton M., and Dinus M. Briggs. *Modern Breeds of Livestock*. New York: Macmillan Company, 1980.
- C. *Horses and Horsemanship*. Urbana, Illinois: Vocational Agriculture Service, College of Agriculture, University of Illinois at Urbana-Champaign, n.d.
- D. James A. Rudolph. *Equine Management and Production*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1980.
- E. Witt, W. H. *Judging Light Horses*. Illinois Vocational Agriculture Services, n.d.

Parts of a Horse



Used with permission of the Vocational Agriculture Service, University of Illinois at Urbana—Champaign.

Locations of Head Markings



Used with permission of the Arabian Horse Registry of America, Inc.

Head Markings



Star

A star is any marking on the forehead.



Snip

A snip is any marking, usually vertical, between the two nostrils.



Strip

A strip is a narrow marking extending vertically in the area between the forehead and the nostrils.



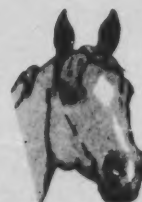
Star and Strip

This is a marking on the forehead with a strip to the nasal peak. The strip does not have to be an extension of the star.



Bald Face

A bald face is a very broad blaze. It can extend out and around the eyes and it can extend down to the upper lip and around the nostrils.



Star, Strip and Snip

This is a marking on the forehead with a narrow extension of the nasal peak and opening up again between the nostrils.

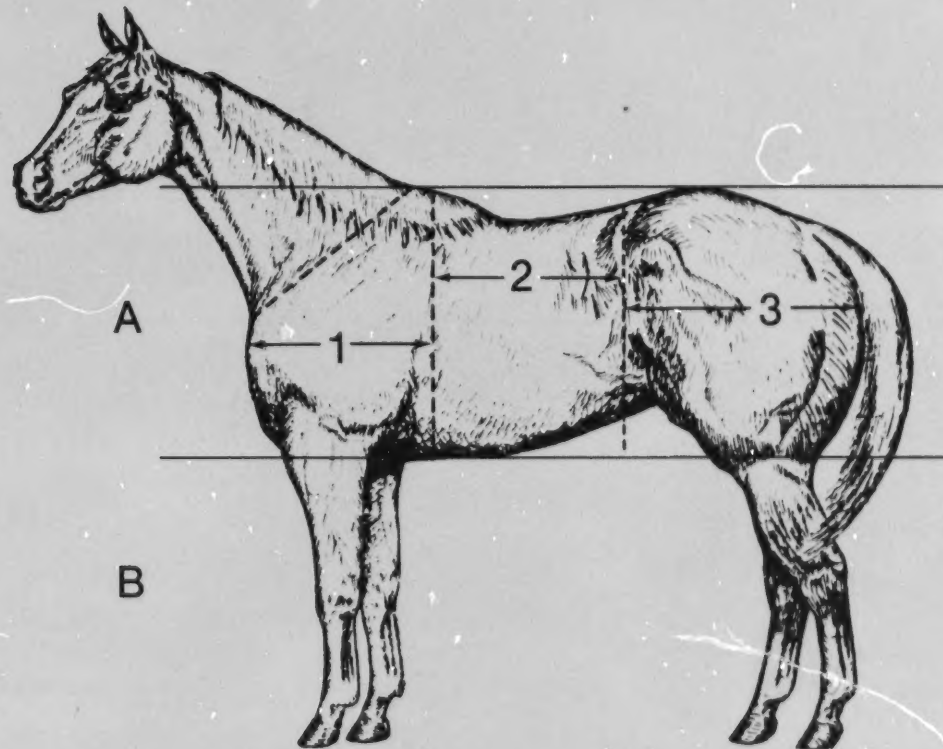


Blaze

A blaze is a broader vertical marking extending the length of the face.

Used with permission of the American Quarter Horse Association, Amarillo, Texas.

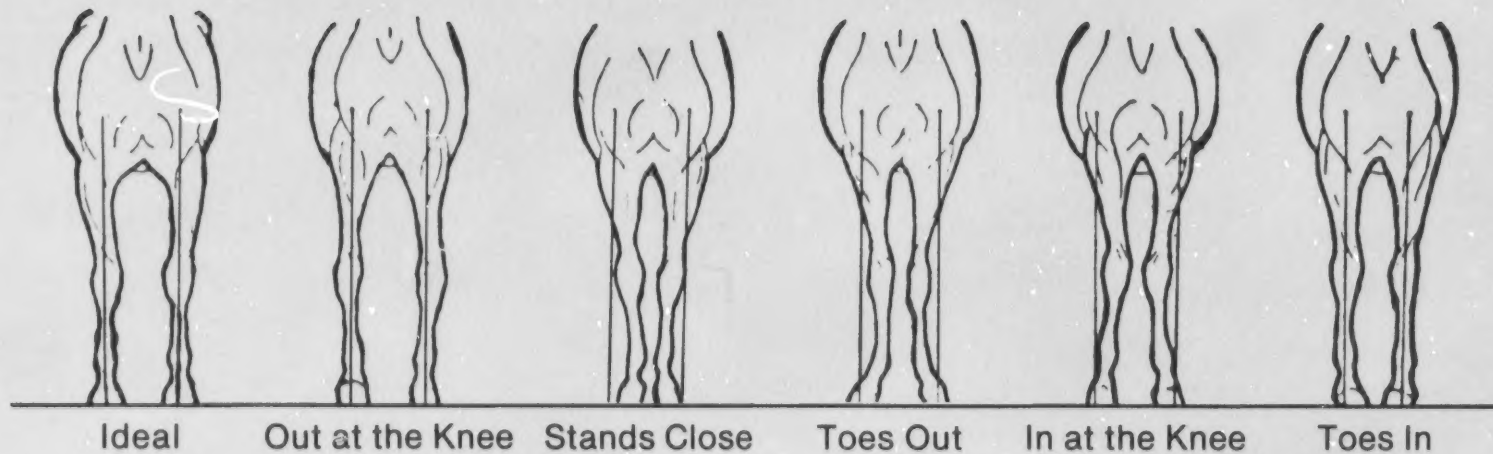
Dimensions of a Light Horse



Adapted with permission of the Vocational Agriculture Service, University of Illinois at Urbana—Champaign.

Foot and Leg Conformation

Front View



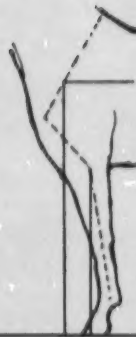
Used with permission of the Vocational Agriculture Service, University of Illinois at Urbana—Champaign.

Foot and Leg Conformation

Side View



Ideal



Camped Under



Camped Out



Over at the Knee



Back at the Knee



Ideal



Stands Under



Camped Out

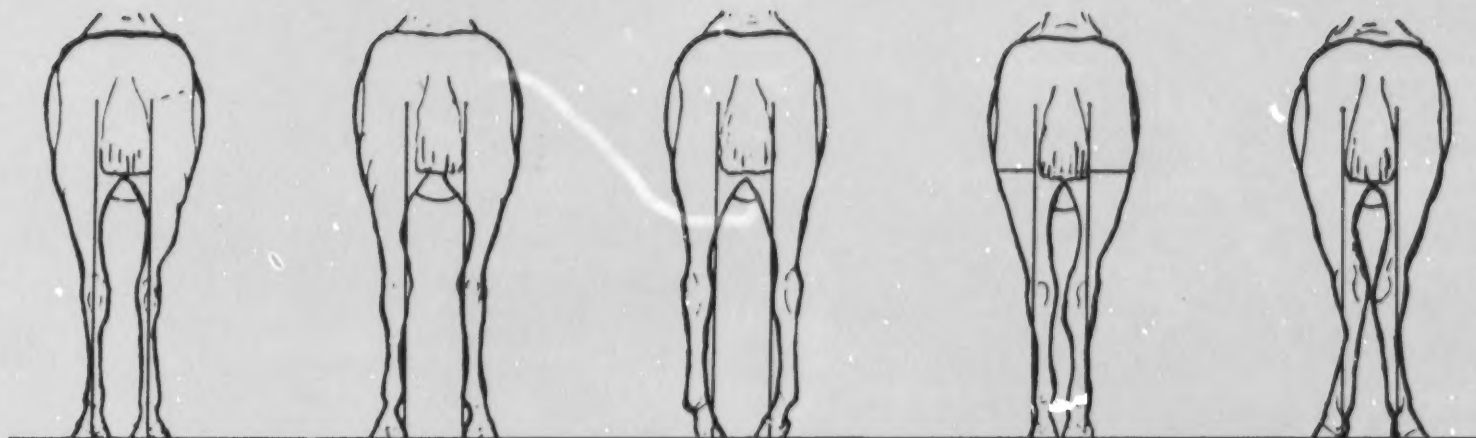


Hind Leg Too Straight

Used with permission of the Vocational Agriculture Service, University of Illinois at Urbana—Champaign

Foot and Leg Conformation

Hind View



Ideal

Stands Wide

Out at the Hock

Stands Close

In at the Hock

Used with permission of the Vocational Agriculture Service, University of Illinois at Urbana—Champaign.

LIGHT HORSE BREEDS AND SELECTION
UNIT VI

INFORMATION SHEET

- I. Terms and definitions
 - A. Mare — Mature female horse
 - B. Foal — Young horse under one year old
 - C. Colt — Male foal
 - D. Filly — Female horse that has not reached reproduction age
 - E. Gelding — Mature male horse that has been castrated
 - F. Stallion — Mature male horse that has not been castrated
 - G. Breed — Animals related by descent from common ancestors and visibly similar in most characteristics
 - H. Judging — Identifying strengths and weaknesses of an animal while comparing it to others
 - I. Halter class — Class of horses exhibited for purpose of judging them on conformation
 - J. Performance class — Any class of horses exhibited under saddle

INFORMATION SHEET

II. Breeds of light horses (Figures 1-6)

A. Morgan

FIGURE 1



Courtesy of the American Morgan Horse Association, Inc., Westmoreland, New York.

B. Quarter horse

FIGURE 2



Courtesy of the American Quarter Horse Association, Amarillo, Texas.

INFORMATION SHEET

C. Paint

FIGURE 3



Courtesy of the American Paint Horse Association, Fort Worth, Texas.

D. Thoroughbred

FIGURE 4

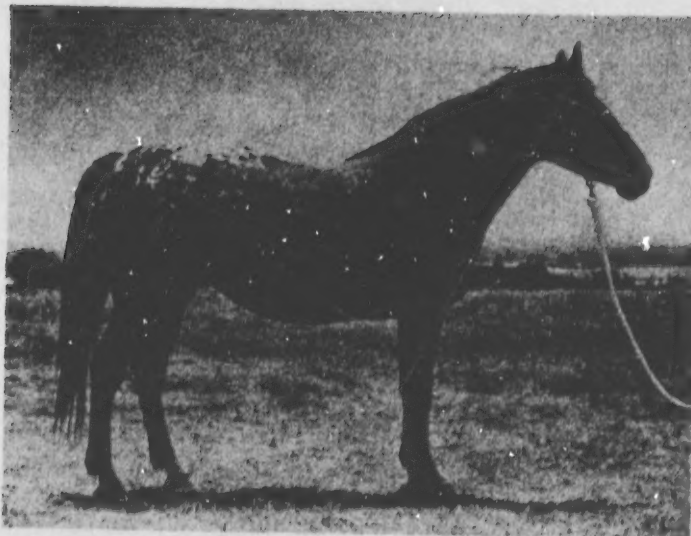


Courtesy of Seth Hancock, Clalborne Farm, Paris, Kentucky.

INFORMATION SHEET

E. Appaloosa

FIGURE 5



F. Arabian

FIGURE 6

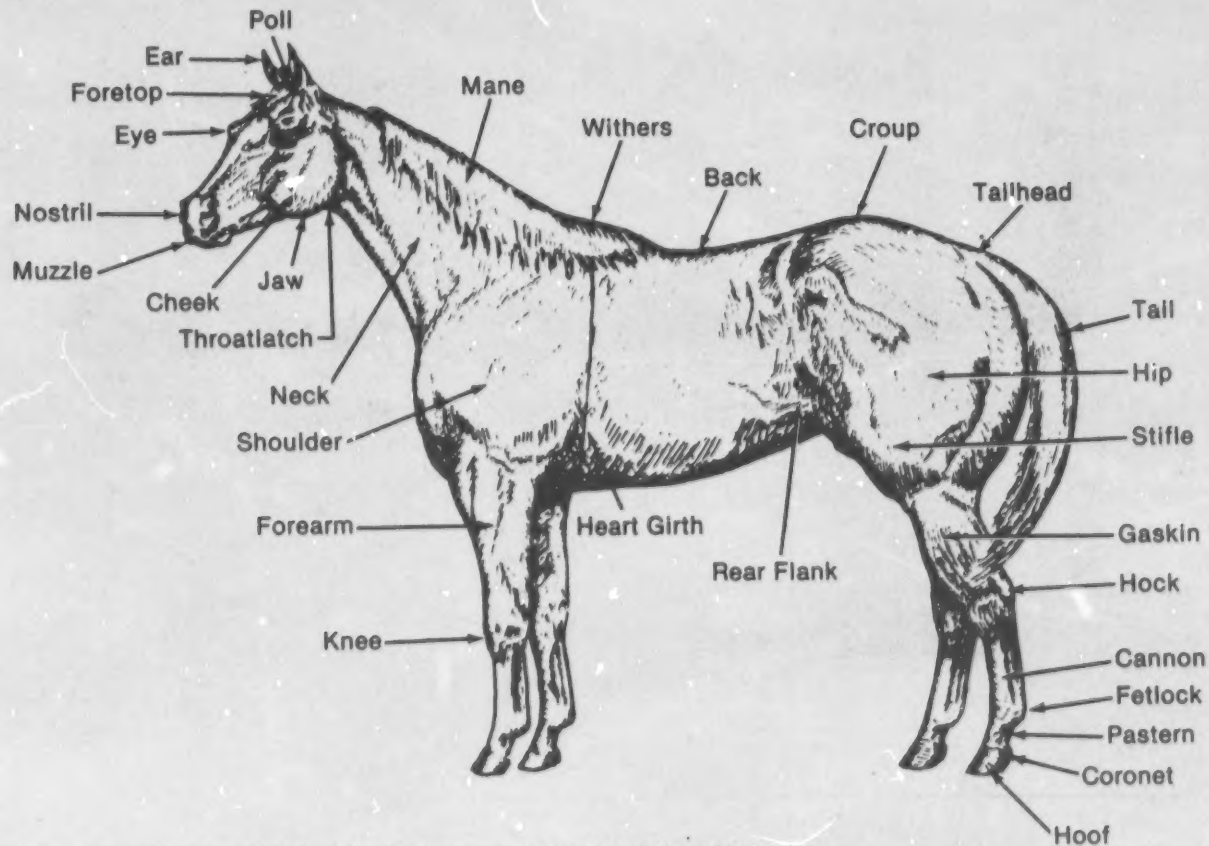


Courtesy of Bob and Joanne Thorndike, Jamal Arabians, Oroville, Washington.

INFORMATION SHEET

III. Parts of a horse (Figure 7)

FIGURE 7



Used with permission of the Vocational Agriculture Service, University of Illinois at Urbana-Champaign.

INFORMATION SHEET

IV. Types of horses and their uses

- A. Gaited — Trained to perform at the walk, trot, canter, slowgait, and rack for pleasure and exhibition

(NOTE: Walk, trot, canter, slowgait, and rack are used to describe the manner and speed that an animal is moving. Gaited horses are classified as either three- or five-gaited, according to whether they are trained to perform just the first three gaits, or all five.)

- B. Harness — Trained to pull vehicles used for pleasure or exhibition

(NOTE: Harness classes usually pull two- or four-wheeled vehicles referred to as buggies or carts.)

- C. Stock — Trained to be used for pleasure, show, and general ranch work

- D. Jumping — Trained to jump high obstacles for pleasure or exhibition

- E. Racing — Trained to compete against other horses by running, pacing, or trotting

V. Common head markings (Figures 8-14)

- A. Star

(NOTE: A star is any white mark on the forehead, located above a line running from eye to eye.)

FIGURE 8



Used with permission of the American Quarter Horse Association, Amarillo, Texas.

INFORMATION SHEET

B. Strip

(NOTE: A strip is a narrow white marking that extends from about the line of the eyes to the nostrils.)

FIGURE 9



Used with permission of the American Quarter Horse Association, Amarillo, Texas.

C. Snip

(NOTE: This is a narrow patch of white down over the muzzle.)

FIGURE 10



Used with permission of the American Quarter Horse Association, Amarillo, Texas.

INFORMATION SHEET

D. Star and strip

(NOTE: This includes both the star and the strip. They may or may not be connected.)

FIGURE 11



Used with permission of the American Quarter Horse Association, Amarillo, Texas.

E. Star, strip, and snip

(NOTE: This includes all three markings. They may or may not be connected.)

FIGURE 12



Used with permission of the American Quarter Horse Association, Amarillo, Texas.

INFORMATION SHEET

F. Blaze

(NOTE: This is a wider patch of white down the face covering the full width of the nasal bones.)

FIGURE 13



Used with permission of the American Quarter Horse Association, Amarillo, Texas.

G. Bald face

(NOTE: This is an even wider patch of white covering front of face, eyes, and nostrils.)

FIGURE 14



Used with permission of the American Quarter Horse Association, Amarillo, Texas.

INFORMATION SHEET

VI. Common leg markings (Figures 15-19)

A. Coronet

(NOTE: The coronet marking is a white strip covering the coronet band.)

FIGURE 15



Used with permission of the American Quarter Horse Association, Amarillo, Texas.

B. Half pastern

(NOTE: The half-pastern marking is a white area that covers half the pastern above the coronet.)

FIGURE 16



Used with permission of the American Quarter Horse Association, Amarillo, Texas.

INFORMATION SHEET

C. Pastern

(NOTE: The pastern marking is a white area extending from coronet to and including pastern.)

FIGURE 17



Used with permission of the American Quarter Horse Association, Amarillo, Texas.

D. Sock or half-stocking

(NOTE: The sock or half-stocking is a white area from coronet to middle of cannon.)

FIGURE 18



Used with permission of the American Quarter Horse Association, Amarillo, Texas.

INFORMATION SHEET

E. Stocking

(NOTE: The stocking is a white area from coronet to knee.)

FIGURE 19



Used with permission of the American Quarter Horse Association, Amarillo, Texas.

VII. Body colors

- A. Bay — Ranges from light yellowish or dark tan to almost brown
(NOTE: The bay color varies from a blood bay to a dark bay, almost brown.)
- B. Brown — Dark to almost black with tan or brown hairs on the muzzle or flanks
- C. Black — Black color with fine black hair on muzzle
- D. Chestnut or sorrel — Ranges from light washy yellow to a dark liver color
- E. Dun — Dull golden color with black points on mane and tail
- F. Gray — Mixture of white and black hairs
- G. Roan — Red, white, and yellow hairs intermingled
- H. Blue roan — Black, white, and yellow hairs intermingled
- I. Buckskin — Form of dun-yellowish or bold body color with a black mane and tail, usually black on lower legs
- J. Appaloosa — Solid color or mottled roan foreparts with lighter color over loin and hips with egg-shaped spots; some are white with spots over entire body
- K. Dappled — Light or dark spots over the basic body color

INFORMATION SHEET

L. Palomino — Golden body color, varying from light yellow to a bright copper color, with a white mane and tail

M. Pinto or paint — White in combination with any other color

(NOTE: Pinto coloring can be on any breed.)

VIII. Terms associated with judging

A. Balance — Overall appearance of the horse; the degree that all body parts are in proportion

B. Coarse — Lacking quality and refinement

C. Conformation — Structure and arrangement of parts as they form the body of the horse

D. Type — Arrangement of the body parts into distinct recognizable patterns

(NOTE: All horses have the same basic conformation, but each breed has a distinct conformation type that makes it different from other breeds.)

E. Quality — Fineness of features, fine hair, and an absence of coarseness

F. Soundness — Freedom from any abnormal deviation in structure or function that interferes with the usefulness of the horse

G. Stylish — Having a pleasing, graceful, alert general appearance

H. Unsoundness — Serious abnormality that affects the serviceability of the horse

I. Blemish — Abnormality that does not affect serviceability of the horse

J. Cuts — Points assigned to a judging class that separate animals by pairs

K. Grant — Recognition that an animal has desirable traits, but that these traits are not acceptable to be used any higher in the class

L. Reasons — Written or oral justification of how a class of animals was placed

IX. General traits to consider in judging a halter class of light horses

A. Type — Overall characteristics that make an animal useful for its intended purpose

B. Conformation — Correctness of structure in feet and legs, muscling, and the overall physical structure

INFORMATION SHEET

- C. Action — Usefulness and soundness of animal
- D. Quality and style — Impression determined by refinement, alertness, carriage, and sex character
- X. Specific traits or points to look for when judging light horses
 - A. Side
 - 1. Type and balance
 - 2. Muscling
 - 3. Alignment of feet and legs
 - 4. Amount and kind of bone
 - 5. Breed character
 - 6. Quality and smoothness
 - 7. Style
 - 8. Size
 - 9. Slope of shoulder
 - 10. Length and strength of back
 - 11. Length of rear quarter
 - 12. Length and set of neck, head, and ears
 - 13. Depth of heart girth
 - B. Front
 - 1. Muscling
 - 2. Alignment of front feet and legs
 - 3. Breed character
 - 4. Quality and smoothness

INFORMATION SHEET

5. Depth and width of chest (Figure 20)

(NOTE: Width of chest is the distance between the front legs measured from the center of one leg to the center of the other leg.)

EXAMPLE: Front view of horse

FIGURE 20



Used with permission of the Vocational Agriculture Service, University of Illinois at Urbana-Champaign.

C. Rear

1. Muscling (stifle, gaskin)
2. Alignment of rear feet and legs
3. Quality and smoothness
4. Width

D. Movement

1. Alignment of action
2. Ease and smoothness of action
3. Absence of lameness

E. Close inspection

1. Soundness
2. Muscling
3. Quality of feet and legs
4. Withers

INFORMATION SHEET

XI. Common conformational faults of feet and legs (Figures 21-28)

A. Toes out

EXAMPLE:

FIGURE 21



B. Toes in

EXAMPLE:

FIGURE 22



Figures 21 and 22 used with permission of the Vocational Agriculture Service, University of Illinois at Urbana-Champaign.

C. Back at the knee

EXAMPLE:

FIGURE 23



D. Over at the knee

EXAMPLE:

FIGURE 24



Figures 23 and 24 used with permission of the Vocational Agriculture Service, University of Illinois at Urbana-Champaign.

INFORMATION SHEET

E. In at the knee

EXAMPLE:

FIGURE 25



F. Out at the knee

EXAMPLE:

FIGURE 26

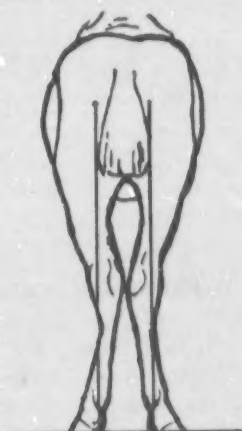


Figures 25 and 26 used with permission of the Vocational Agriculture Service, University of Illinois at Urbana-Champaign.

G. In at the hock

EXAMPLE:

FIGURE 27



H. Out at the hock

EXAMPLE:

FIGURE 28



Figures 27 and 28 used with permission of the Vocational Agriculture Service, University of Illinois at Urbana-Champaign.

INFORMATION SHEET

- XII. Purpose of the FFA placing card — To identify the judge and to record the placing (Figure 29)

(NOTE: Always use a pencil to complete the card, and write clearly. If written incorrectly, the card can cause a team to lose a contest.)

EXAMPLE:

FIGURE 29

FFA PLACING CARD		Contestant's Initial	No.	
		BP	100-A	
		Class	Two-year-old geldings	
Placing Grade				
Reason Grade				
	1-2-3-4			
	1-2-4-3			
	1-3-2-4			
	1-3-4-2			
	1-4-2-3			
	1-4-3-2			
	2-1-3-4			
	2-1-4-3			X
	2-3-1-4			
	2-3-4-1			
	2-4-1-3			
	2-4-3-1			
	3-1-2-4			
	3-1-4-2			
	3-2-1-4			
	3-2-4-1			
	3-4-1-2			
	3-4-2-1			
	4-1-2-3			
	4-1-3-2			
	4-2-1-3			
	4-2-3-1			
	4-3-1-2			
	4-3-2-1			

- XIII. Computing placing scores

(NOTE: There are always four animals in a class. The maximum score possible on a class is fifty. A score of fifty points represents a perfect placing, an exact match with the official placings on the class. After the class is judged and the official placings have been announced, you should be able to compute your score. Point variations, referred to as *cuts*, are made between the different animals in the class. Use simple addition and subtraction to calculate your score.)

INFORMATION SHEET

A. Compare your placing to official placing

EXAMPLE: Official Placing Your Placing
 1 - 4 - 3 - 2 1 - 2 - 3 - 4
 2 5 4 (cuts)

B. Write your placings as pairs

EXAMPLE: 1/2 2/3 3/4
 1/3 2/4
 1/4

C. Use cuts to calculate points

1. Compare each pair you placed to the corresponding pair in the official placing
2. Count zero points for each matching pair
3. Count points for pairs that do not match by adding cuts that fall between the paired numbers
4. Total the points for all pairs

EXAMPLE: Official placing 1 - 4 - 3 - 2 Your placing 1 - 2 - 3 - 4
 2 5 4
 1/2 = 0 points 2/3 = 4 points 3/4 = 5 points
 1/3 = 0 points 2/4 = 5 + 4 or 9 points
 1/4 = 0 points

Total of the points = 4 + 9 + 5 = 18

D. Subtract total points from 50 to find placing score

EXAMPLE: Subtract 18 points from 50 points = 32 points

Your score = 32

(NOTE: If you placed the class 4 - 1 - 3 - 2, you would have a top switch, which would cost you two points; your score would be 48 points. With a placing of 1 - 3 - 4 - 2, the 3 and 4 switch would cost you 5 points; your score would be 45.)

INFORMATION SHEET

XIV. Terms of comparison (Table 1)

TABLE 1

AREA	DESIRABLE	UNDESIRABLE
General	Typier (more breed type) Smoother Higher quality More nicely balanced More stylish Heavier-muscled Longer, cleaner muscling	Off type Rough Coarse; low quality Poorly balanced Plain Light-muscled Short, bunchy muscling
Head and Neck	Shorter, broader head More alert eye Neater muzzle More massive jaw Shorter ear Cleaner at the throatlatch Smoother-necked Neck blends smoothly at shoulder More breed character Longer neck More desirable set to neck	Long, narrow head Sleepy-eyed Coarse muzzle Small jaw Long, mule ear Coarse-throated Coarse, thick neck Rough at shoulder Plain head Short neck Low-headed; high-headed
Shoulder	More prominent withers Cleaner withers More angle in the shoulder Deeper shoulder (longer) More sloping shoulder Smoother shoulder	Low, flat withers Muttony (fat) withers Steep shoulder Shallow shoulder (shorter) Steep shoulder Rough shoulder

INFORMATION SHEET

AREA	DESIRABLE	UNDESIRABLE
Chest and Forelegs	Deeper chest Broader chest Wider set forelegs Heavier forearm Longer, tapering forearm muscle Smoother knee joint Deeper-jointed Shorter cannon More medium length pastern More correct set of pastern	Shallow chest Narrow chest Narrow set forelegs Light forearm Short, bunchy forearm muscle Coarse jointed Shallow jointed Long cannon Long, weak pastern; short, stiff pastern Weak pastern; steep pastern
Barrel and Topline	Deeper in the heart More spring in forerib Shorter back Shorter, stronger coupling Closer-coupled Stronger back Smoother hip Longer underline	Shallow in the heart Flat-ribbed; flat-sided Long back Long, weak coupling Slack-coupled Weak back Rough hips; boxy hips Short underline

INFORMATION SHEET

AREA	DESIRABLE	UNDESIRABLE
Quarter and Rear Legs	Heavy-quartered Longer croup Nicer turned croup From the side: Wider stifle Wider gaskin Deeper hock From the rear: Thicker, fuller quarter Thicker through stifle More gaskin inside and out Smoother-hocked	Light-quartered Short croup Steep croup; flat croup Narrow stifle Light gaskin Shallow hock Narrow quarter Light in the stifle Thin gaskin Coarse, rough hocks
Bone, Feet and Legs; Stance	Heavier bone; stronger bone Flatter, cleaner cannons Shorter cannons More correct pasterns Cleaner joints Roomier, well-rounded feet Deeper, more open heel Smoother, harder hooves Straighter legs	Light bone Round cannons Long cannons Weak pasterns; steep pasterns Fleeshy joints; puffy joints Mule-footed Shallow heel; narrow heel Thin, cracked hooves Crooked legs

INFORMATION SHEET

AREA	DESIRABLE	UNDESIRABLE
Front Legs	Straighter on front legs, stands more correctly on the forelegs Straighter on feet	Knock-kneed; bow-legged; buck-kneed; calf-kneed Pigeon-toed; splay-footed
Hind Legs	More correct on hind legs Straighter feet More correct set at the hock	Cow-hocked; bow-legged; bandy-legged Toes out; toes in Sickle-hocked (too much angle); post-legged (not enough angle)
Action	Truer action Moves straighter in front Moves straighter behind More correct hock action Freer moving Snappier stride Longer stride More forceful stride More correct flexion (hocks, knees, ankles)	Faulty action Paddles (wings out); moves close (rope walks) Wings out; wings in Rolls the hocks (lateral movement); jerks the hocks Stumbles; interferes; forges (hits front foot with back) Sluggish Short stride Halting stride Stiff (hock, knee, ankle); too much flexion (lifts feet too high)

INFORMATION SHEET

XV. Guidelines for taking notes for oral reasons for placings

- A. Make notes identifying each horse in class
- B. Develop chart with placing, reasons, grants, and faults

EXAMPLE:

NAME: Jane Smith	
CLASS JUDGED: Quarter Horse Mares	PLACING: 1-2-4-3
Top Pair	
$\frac{1}{2}$ Advantages	$\frac{2}{1}$ Grant
- higher quality; balanced	more level croup
- cleaner neck, tie higher	
- longer shoulder	
- shorter back, deeper heart girth	
- lower knees and hocks, straighter knees and cannon	
$\frac{3}{4}$ Balance front to rear	$\frac{4}{2}$
- shorter face to muzzle	lower knees and hocks
- cleaner top neck	
- longer, sloping shoulder	
- length of hip	
Muscling more	
- forearm, chest	
- longer forearm and gaskin	
$\frac{4}{3}$ Balance	$\frac{4}{3}$
- longer, cleaner neck	no grant
- shorter, stronger back and loin	
- longer hip	
Structural correctness	
- wider base front leg	
- straighter hocks rear view	

INFORMATION SHEET

XVI. Techniques for writing reasons for placings

EXAMPLE:

AGED GELDINGS

David W. Freeman
State Extension Equine Specialist
405-624-6060

Sir, I placed this class of aged geldings 1-2-4-3.

In my top pair, I placed 1 over 2 because 1 was higher quality and more nicely balanced with a cleaner neck tying in higher to a longer shoulder. Further, 1 was more level from withers to croup, had a shorter back in relation to underline and was longer in the croup. In addition, 1 was deeper in the heart girth and stood lower in the knees and hocks. One also was more structurally correct, being straighter in the knees and cannon as viewed from the front. I grant 2 was more level over the croup and;

I placed 2 over 4 in my middle pair because 2 was more heavily muscled and more balanced front to rear than 4. Two was shorter in the face to muzzle, cleaner over the top of the neck, longer and more sloping in the shoulder and had more length of hip. Further, 2 was more powerfully muscled in the forearm and chest and had longer, lower tying muscling in the forearm and gaskin. I admit 4 stood lower in the knees and hocks as viewed from the side and;

Moving to my bottom pair, I placed 4 over 3. Four was more balanced being longer and cleaner in the neck, shorter and stronger over the back and loin and longer in the hip. In addition, 4 stood wider at the base of the leg as viewed from the front and was straighter in the hocks as viewed from the rear. I criticized 3 for being long in the head, short in the neck, shallow in the shoulder, long in the back and short in the hip.

Thank you.

Courtesy of David W. Freeman, Oklahoma State Extension Equine Specialist.

INFORMATION SHEET

- A. Start your reasons by saying, "I placed this class of (age), (breed), (sex)" and then give placings

EXAMPLE: "I placed this class of three-year-old quarter horse geldings 3 - 1 - 2 - 4."

- B. Arrange class into three pairs: top, middle, and bottom
- C. Make reasons easily understood by official judge
- D. Compare horses rather than describe them
- E. Compare horses in logical sequence

(NOTE: Place comments in an order from front to rear of animal or top to bottom.)

- F. Stress strong points of the top horse in each pair and then admit or grant any way the bottom horse in each pair may excel; repeat same order for second and third pair

XVII. Techniques for giving oral reasons for placings

- A. Stay within the allowable two minutes
- B. Do not use notes while giving reasons for placings; use only placing card
- C. Stand squarely on both feet
- D. Stand approximately 4 to 8 feet from reason-taker
- E. Maintain eye contact with reason-taker

(NOTE: If you find it difficult to maintain eye contact, direct your eyes to the top of listener's forehead.)

- F. Speak clearly
- G. Deliver reasons in a convincing, truthful, and easily understood manner
- H. Keep reasons concise, using correct terminology and grammar
- I. Emphasize big differences between horses, stressing the comparisons in which the top animal in each pair is superior
- J. Upon conclusion, thank reason-taker and leave

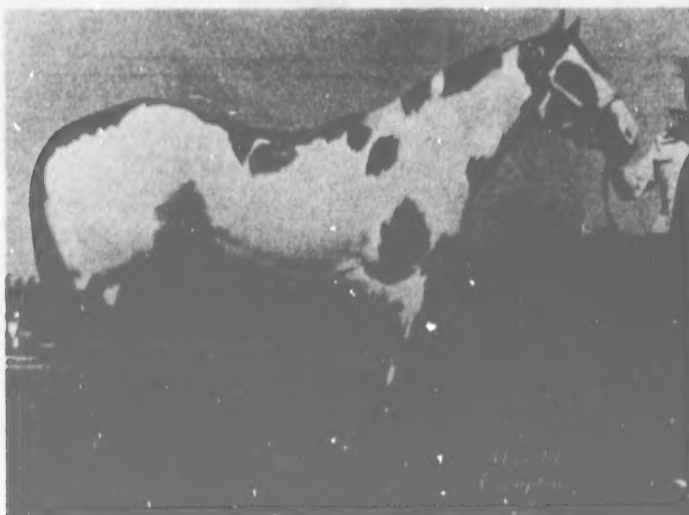
LIGHT HORSE BREEDS AND SELECTION
UNIT VI

ASSIGNMENT SHEET #1 — IDENTIFY BREEDS OF LIGHT HORSES

NAME _____

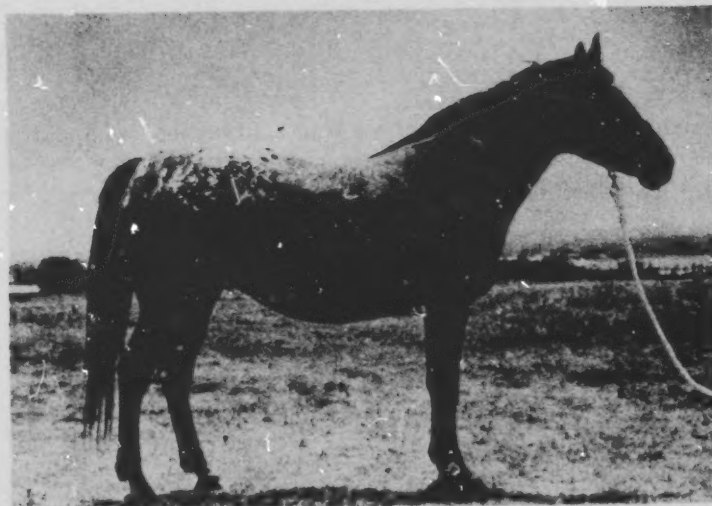
SCORE _____

When purchasing, judging, or selecting breeds of light horses, you must be able to call the breeds by their correct names. Below are photographs of the different breeds. Look at the photographs and write the correct breed name in each blank.



A. _____

ASSIGNMENT SHEET #1



B. _____

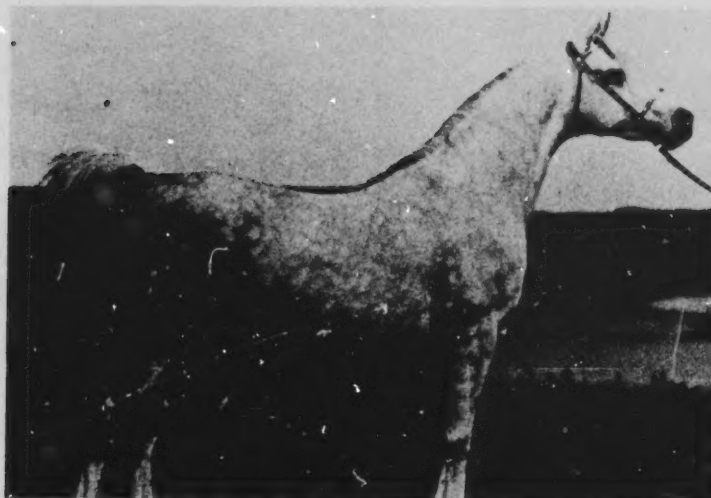


C. _____

ASSIGNMENT SHEET #1



D. _____



E. _____

ASSIGNMENT SHEET #1



F. _____

Photographs used in this assignment sheet courtesy of the American Paint Horse Association, Fort Worth, Texas; Seth Hancock, Claiborne Farm, Paris, Kentucky; the American Quarter Horse Association, Amarillo, Texas; Bob and Joanne Thorndike, Jamal Arabians, Oroville, Washington, and the American Morgan Horse Association, Inc., Westmoreland, New York.

ASSIGNMENT SHEET #2

A.	_____	P.	_____
B.	_____	Q.	_____
C.	_____	R.	_____
D.	_____	S.	_____
E.	_____	T.	_____
F.	_____	U.	_____
G.	_____	V.	_____
H.	_____	W.	_____
I.	_____	X.	_____
J.	_____	Y.	_____
K.	_____	Z.	_____
L.	_____	AA.	_____
M.	_____	BB.	_____
N.	_____	CC.	_____
O.	_____	DD.	_____

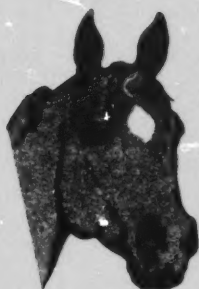
LIGHT HORSE BREEDS AND SELECTION
UNIT VI

ASSIGNMENT SHEET #3 — LABEL COMMON HEAD MARKINGS

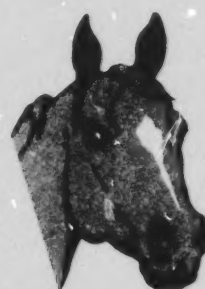
NAME _____

SCORE _____

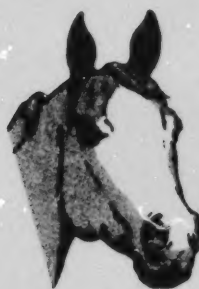
There are several different types of head markings. These markings are used to describe a certain animal in a judging class, so it is very important to call a marking by its correct name. Below are different head markings; write the correct name in each blank.



A. _____



B. _____



C. _____



D. _____

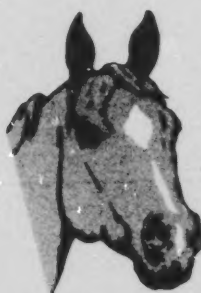
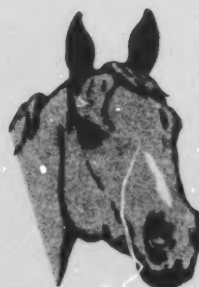
Illustrations used with permission of the American Quarter Horse Association, Amarillo, Texas.

ASSIGNMENT SHEET #3



E.

F.



G.

Illustrations used with permission of the American Quarter Horse Association, Amarillo, Texas.

LIGHT HORSE BREEDS AND SELECTION UNIT VI

ASSIGNMENT SHEET #4 — LABEL COMMON LEG MARKINGS

NAME _____

SCORE _____

Learning to identify common leg markings is important because the marking points are referenced when identifying an animal in a judging class. Illustrated below are different leg markings. Write the correct name in each blank.



A. _____



B. _____



C. _____



D. _____

Illustrations used with permission of the American Quarter Horse Association, Amarillo, Texas.

ASSIGNMENT SHEET #4



E. _____

Illustration used with permission of the American Quarter Horse Association, Amarillo, Texas.

LIGHT HORSE BREEDS AND SELECTION UNIT VI

ASSIGNMENT SHEET #5 — LABEL COMMON CONFORMATIONAL FAULTS OF FEET AND LEGS

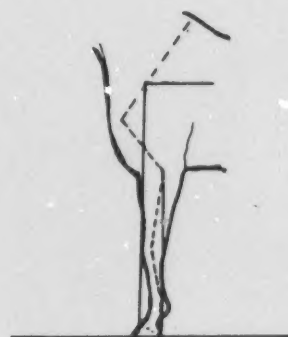
NAME _____

SCORE _____

When judging a halter class or when selecting an animal for purchase, you must look for the different types of conformational faults in the feet and legs. Label the conformational faults shown in the drawings.



A. _____



B. _____



C. _____



D. _____

Illustrations used with permission of the Vocational Agriculture Service, University of Illinois at Urbana-Champaign.

ASSIGNMENT SHEET #5



E.



F.



G.



H.

Illustrations used with permission of the Vocational Agriculture Service, University of Illinois at Urbana-Champaign.

LIGHT HORSE BREEDS AND SELECTION UNIT VI

ASSIGNMENT SHEET #6 — USE FFA PLACING CARDS

NAME _____

SCORE _____

It is possible to be eliminated from judging competition if you do not fill out and use the FFA placing card correctly. The card identifies you as the judge, the class you are judging, and your correct placings. Using the information given below, fill out the following cards.

- A. Use your correct initials. You are contestant No. 100-B, judging a class of two-year-old fillies. Your placings were 2 - 1 - 4 - 3.

FFA PLACING CARD																																																		
Contestant's Initial Class		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 15%;">1-2-3-4</td><td style="width: 15%;"></td></tr> <tr><td>1-2-4-3</td><td></td></tr> <tr><td>1-3-2-4</td><td></td></tr> <tr><td>1-3-4-2</td><td></td></tr> <tr><td>1-4-2-3</td><td></td></tr> <tr><td>1-4-3-2</td><td></td></tr> <tr><td>2-1-3-4</td><td></td></tr> <tr><td>2-1-4-3</td><td></td></tr> <tr><td>2-3-1-4</td><td></td></tr> <tr><td>2-3-4-1</td><td></td></tr> <tr><td>2-4-1-3</td><td></td></tr> <tr><td>2-4-3-1</td><td></td></tr> <tr><td>3-1-2-4</td><td></td></tr> <tr><td>3-1-4-2</td><td></td></tr> <tr><td>3-2-1-4</td><td></td></tr> <tr><td>3-2-4-1</td><td></td></tr> <tr><td>3-4-1-2</td><td></td></tr> <tr><td>3-4-2-1</td><td></td></tr> <tr><td>4-1-2-3</td><td></td></tr> <tr><td>4-1-3-2</td><td></td></tr> <tr><td>4-2-1-3</td><td></td></tr> <tr><td>4-2-3-1</td><td></td></tr> <tr><td>4-3-1-2</td><td></td></tr> <tr><td>4-3-2-1</td><td></td></tr> </table>	1-2-3-4		1-2-4-3		1-3-2-4		1-3-4-2		1-4-2-3		1-4-3-2		2-1-3-4		2-1-4-3		2-3-1-4		2-3-4-1		2-4-1-3		2-4-3-1		3-1-2-4		3-1-4-2		3-2-1-4		3-2-4-1		3-4-1-2		3-4-2-1		4-1-2-3		4-1-3-2		4-2-1-3		4-2-3-1		4-3-1-2		4-3-2-1	
1-2-3-4																																																		
1-2-4-3																																																		
1-3-2-4																																																		
1-3-4-2																																																		
1-4-2-3																																																		
1-4-3-2																																																		
2-1-3-4																																																		
2-1-4-3																																																		
2-3-1-4																																																		
2-3-4-1																																																		
2-4-1-3																																																		
2-4-3-1																																																		
3-1-2-4																																																		
3-1-4-2																																																		
3-2-1-4																																																		
3-2-4-1																																																		
3-4-1-2																																																		
3-4-2-1																																																		
4-1-2-3																																																		
4-1-3-2																																																		
4-2-1-3																																																		
4-2-3-1																																																		
4-3-1-2																																																		
4-3-2-1																																																		
Placing Grade _____																																																		
Reason Grade _____																																																		

ASSIGNMENT SHEET #6

- B. Use your correct initials. You are contestant 10-D, judging a class of one-year-old stallions. Your placings were 4 - 1 - 3 - 2.

FFA PLACING CARD		Contestant's Initial _____	No. _____	Class _____	1-2-3-4	_____
					1-2-4-3	_____
					1-3-2-4	_____
					1-3-4-2	_____
					1-4-2-3	_____
					1-4-3-2	_____
					2-1-3-4	_____
					2-1-4-3	_____
					2-3-1-4	_____
					2-3-4-1	_____
					2-4-1-3	_____
					2-4-3-1	_____
					3-1-2-4	_____
					3-1-4-2	_____
					3-2-1-4	_____
					3-2-4-1	_____
					3-4-1-2	_____
					3-4-2-1	_____
					4-1-2-3	_____
					4-1-3-2	_____
					4-2-1-3	_____
					4-2-3-1	_____
					4-3-1-2	_____
					4-3-2-1	_____
Placing Grade _____						
Reason Grade _____						

ASSIGNMENT SHEET #6

- C. Use your correct initials. You are contestant 8-A, judging a class of four-year-old geldings. Your placings were 2 - 4 - 3 - 1.

FFA PLACING CARD		Contestant's Initial _____	No. _____	Class _____	1-2-3-4	_____
					1-2-4-3	_____
					1-3-2-4	_____
					1-3-4-2	_____
					1-4-2-3	_____
					1-4-3-2	_____
					2-1-3-4	_____
					2-1-4-3	_____
					2-3-1-4	_____
					2-3-4-1	_____
					2-4-1-3	_____
					2-4-3-1	_____
					3-1-2-4	_____
					3-1-4-2	_____
					3-2-1-4	_____
					3-2-4-1	_____
					3-4-1-2	_____
					3-4-2-1	_____
					4-1-2-3	_____
					4-1-3-2	_____
					4-2-1-3	_____
					4-2-3-1	_____
					4-3-1-2	_____
					4-3-2-1	_____
Placing Grade _____						
Reason Grade _____						

LIGHT HORSE BREEDS AND SELECTION
UNIT VI

ASSIGNMENT SHEET #7 — COMPUTE PLACING SCORES

NAME _____

SCORE _____

There is a total of fifty possible points in a class. A score of fifty points represents a perfect score. There are twenty-four possible placings on any given class. Prior to your judging the class, a group of selected officials will have already evaluated the class, determined the official placings, and identified the different cuts that each class should receive. The cuts are used to compute your score. The purpose of this assignment is to give you practice in computing your scores.

Use Information Sheet, Section XIII, to assist in working the following problems.

- A. Class #1 — Yearling foals. Official placings are 3 - 2 - 1 - 4 with cuts of 4, 4, 3. You placed the class 1 - 2 - 3 - 4. What is your score?

Your score = _____

ASSIGNMENT SHEET #7

- B. Class #2 — Aged stallions. Official placings are 1 - 3 - 2 - 4, with cuts of 3, 5, 3. You placed the class 1 - 3 - 4 - 2. What is your score?

Your score = _____

- C. Class #3 — Three-year-old geldings. Official placings are 4 - 2 - 1 - 3, with cuts of 5, 5, 5. You placed the class 1 - 3 - 4 - 2. What is your score?

Your score = _____

LIGHT HORSE BREEDS AND SELECTION
UNIT VI

ASSIGNMENT SHEET #8 — WRITE TERMS OF COMPARISON USED IN
JUDGING A HALTER CLASS OF LIGHT HORSES

NAME _____ SCORE _____

When giving reasons for placing a class of horses, judges must use the standard terminology to compare horses. Below is a list of terms commonly used in giving reasons for placings. For each term of desirable comparison, write its opposite, undesirable term; for each undesirable term, write the opposite, desirable term.

- A. Smoother _____
- B. More stylish _____
- C. Light-muscled _____
- D. Small jaw _____
- E. Short neck _____
- F. Neck blends smoothly at shoulder _____
- G. Cleaner withers _____
- H. Smoother shoulder _____
- I. Broader chest _____
- J. Long cannon _____
- K. More correct set of pastern _____
- L. Shallow chest _____
- M. Coarse jointed _____
- N. Shorter back _____
- O. Weak back _____
- P. Short underline _____
- Q. Light-quartered _____
- R. Mule-footed _____
- S. Light bone _____
- T. Long cannons _____

LIGHT HORSE BREEDS AND SELECTION
UNIT VIASSIGNMENT SHEET #9 — EVALUATE TWO HORSES FOR
COMPARABLE ADVANTAGES

NAME _____

SCORE _____

A good horse judge is capable of walking up to two horses, looking them over, and finding comparable advantages. Study the following photographs and write the advantages and disadvantages of each horse in the spaces below its photograph.

ASSIGNMENT SHEET #9

A.



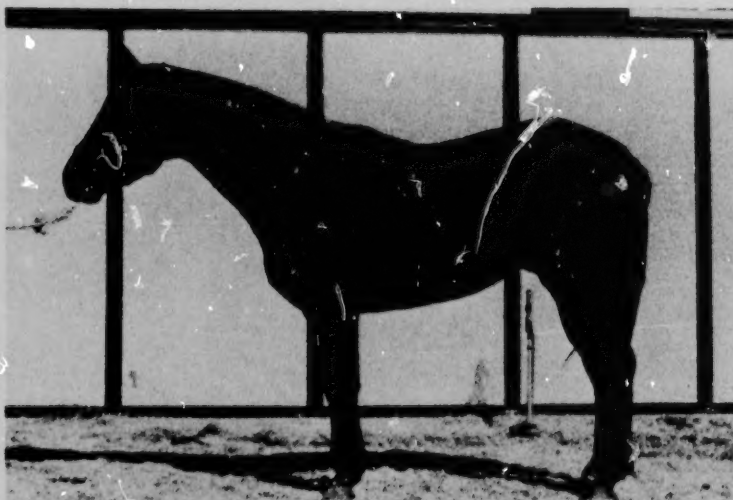
Courtesy of Oklahoma State University, Stillwater, Oklahoma.

Advantages

Disadvantages

ASSIGNMENT SHEET #9

B.



Courtesy of Oklahoma State University, Stillwater, Oklahoma.

Advantages

Disadvantages

LIGHT HORSE BREEDS AND SELECTION UNIT VI

ASSIGNMENT SHEET #10 -- JUDGE HALTER CLASSES OF LIGHT HORSES

NAME _____ SCORE _____

This assignment sheet has two parts. In Part I, using a set of slides taken during the 1980 Houston Exposition, you will judge halter class #3 — Aged Geldings. In Part II, you will judge a class that the instructor has put together or use another set of slides. Write notes on both classes. Your notes will be used in future assignment sheets.

PART I

Class	#3 Aged Geldings	Placings
-------	------------------	----------

Write your notes in the space below.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are some faint, light-colored marks and smudges scattered across the surface, possibly from handling or scanning. No text or other markings are present.

ASSIGNMENT SHEET #10

PART II

Judge another halter class of horses. Use another slide set or a class that the instructor has already selected. The official placings have already been made. Write the name of the class and your placings.

Class _____ Placings _____

Write your notes on the class.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are some small, dark specks and faint smudges scattered across the surface, which appear to be dust or minor imperfections on the paper or the scanning process. No text or other markings are present.

LIGHT HORSE BREEDS AND SELECTION UNIT VI

ASSIGNMENT SHEET #11 — WRITE A SET OF REASONS FOR PLACING A CLASS OF LIGHT HORSES

NAME _____

SCORE _____

One of the most important things you can learn in your Vo-Ag program is how to write and give reasons for placings. Writing reasons requires you to organize your thoughts in a sequential manner and to state facts as to why you placed one animal over another. Use the space below and on the next page to write the reasons for your placings on one of the classes of horses that you judged in Assignment Sheet #10. Be sure to identify the class you are describing.

Class _____

[illegible]

ASSIGNMENT SHEET #11

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are some small, dark specks and faint smudges scattered across the surface, likely due to the scanning process or the age of the paper. No text or other markings are present.

LIGHT HORSE BREEDS AND SELECTION
UNIT VIASSIGNMENT SHEET #12 — GIVE A SET OF ORAL REASONS FOR
PLACING A CLASS OF LIGHT HORSES

NAME _____ SCORE _____

Presenting oral reasons for placings is an important part of the judging process. Review your written reasons from Assignment Sheet #11 carefully, make any changes that you think necessary, and give the reasons orally when called on. Your instructor or a junior or senior vocational agriculture student will listen to your reasons.

To help you prepare oral reasons for your placings, answer the following questions.

- A. For which class are you giving the reasons? _____
- B. How did you place the class? _____
- C. What is your opening statement? _____

- D. Have you studied the reasons, and can you present them without using any of your notes? _____

- E. What is your closing statement? _____

LIGHT HORSE BREEDS AND SELECTION
UNIT VIASSIGNMENT SHEET #13 — USE RESOURCE MATERIAL TO LOCATE INFORMATION
RELATED TO THE BREED ASSOCIATION, ORIGIN,
COLOR, AND CHARACTERISTICS OF A
LIGHT HORSE BREED

NAME _____ SCORE _____

Use resource material provided by your instructor, the library, and the respective breed association to answer the following questions about one breed of light horses.

Breed _____

A. Where did the breed originate?

B. Where is the breed's headquarters located?

C. What is the breed primarily used for?

D. What is the color of the breed?

E. What is the average size of the breed?

Height _____ Weight _____

F. Does the breed association publish a newsletter or journal? If yes, what is the name?

G. How many animals are recorded in the association?

H. What is the Jockey Club?

LIGHT HORSE BREEDS AND SELECTION
UNIT VI

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

- A. Paint
- B. Appaloosa
- C. Thoroughbred
- D. Quarter horse
- E. Arabian
- F. Morgan

Assignment Sheet #2

- | | |
|-------------|-----------------|
| A. Hoof | P. Poll |
| B. Coronet | Q. Ear |
| C. Pastern | R. Foretop |
| D. Fetlock | S. Eye |
| E. Cannon | T. Ncstril |
| F. Hock | U. Muzzle |
| G. Gaskin | V. Cheek |
| H. Stifle | W. Jaw |
| I. Hip | X. Throatlatch |
| J. Tail | Y. Neck |
| K. Tailhead | Z. Shoulder |
| L. Croup | AA. Forearm |
| M. Back | BB. Knee |
| N. Withers | CC. Heart girth |
| O. Mane | DD. Rear flank |

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #3

- A. Star
- B. Star and strip
- C. Bald face
- D. Snip
- E. Blaze
- F. Strip
- G. Star, strip, and snip

Assignment Sheet #4

- A. Stocking
- B. Sock or half stocking
- C. Pastern
- D. Coronet
- E. Half pastern

Assignment Sheet #5

- A. Toes in
- B. Over at the knee
- C. Back at the knee
- D. In at the knee
- E. Out at the hock
- F. Toes out
- G. In at the hock
- H. Out at the knee

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #6

A.

FFA PLACING CARD

Contestant's Initial _____ No. 100-B

Class Two-year-old fillies

1-2-3-4	
1-2-4-3	
1-3-2-4	
1-3-4-2	
1-4-2-3	
1-4-3-2	
2-1-3-4	
2-1-4-3	X
2-3-1-4	
2-3-4-1	
2-4-1-3	
2-4-3-1	
3-1-2-4	
3-1-4-2	
3-2-1-4	
3-2-4-1	
3-4-1-2	
3-4-2-1	
4-1-2-3	
4-1-3-2	
4-2-1-3	
4-2-3-1	
4-3-1-2	
4-3-2-1	

Placing Grade _____

Reason Grade _____

B.

FFA PLACING CARD

Contestant's Initial _____ No. 10-D

Class One-year-old stallions

1-2-3-4	
1-2-4-3	
1-3-2-4	
1-3-4-2	
1-4-2-3	
1-4-3-2	
2-1-3-4	
2-1-4-3	
2-3-1-4	
2-3-4-1	
2-4-1-3	
2-4-3-1	
3-1-2-4	
3-1-4-2	
3-2-1-4	
3-2-4-1	
3-4-1-2	
3-4-2-1	
4-1-2-3	
4-1-3-2	X
4-2-1-3	
4-2-3-1	
4-3-1-2	
4-3-2-1	

Placing Grade _____

Reason Grade _____

ANSWERS TO ASSIGNMENT SHEETS

C.

FFA PLACING CARD		Contestant's Initial	No. <u>8-A</u>	Class <u>Four-year-old geldings</u>	1-2-3-4	
					1-2-4-3	
Placing Grade _____	Reason Grade _____				1-3-2-4	
					1-3-4-2	
					1-4-2-3	
					1-4-3-2	
					2-1-3-4	
					2-1-4-3	
					2-3-1-4	
					2-3-4-1	
					2-4-1-3	
					2-4-3-1	X
					3-1-2-4	
					3-1-4-2	
					3-2-1-4	
					3-2-4-1	
					3-4-1-2	
					3-4-2-1	
					4-1-2-3	
					4-1-3-2	
					4-2-1-3	
					4-2-3-1	
					4-3-1-2	
					4-3-2-1	

Assignment Sheet #7

- A. 34
- B. 47
- C. 10

Assignment Sheet #8

- A. Rough
- B. Plain
- C. Heavier-muscled
- D. More massive jaw
- E. Longer neck

ANSWERS TO ASSIGNMENT SHEETS

- F. Rough at shoulder
- G. Muttony (fat) withers
- H. Rough shoulder
- I. Narrow chest
- J. Shorter cannon
- K. Weak pastern; steep pastern
- L. Deeper chest
- M. Smoother knee joint
- N. Long back
- O. Stronger back
- P. Longer underline
- Q. Heavy-quartered
- R. Roomier, well-rounded feet
- S. Heavier bone; stronger bone
- T. Shorter cannons

Assignment Sheet #9

A. Advantages

High quality
 Nicely balanced
 Heavily muscled
 Quality head
 Long neck
 Good slope on shoulder
 Short back
 Long hip

Disadvantages

High on hocks
 Runs downhill
 Excessive set to hocks (sickle-hocked)

B. Advantages

Structurally correct
 Nice slope to neck

Disadvantages

Poorly balanced
 Straight shouldered
 Long backed
 Short hipped
 Light muscled
 Low quality head
 Short crouped
 Runs downhill
 Neck ties in low at withers

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #10

PART I — Evaluated to the satisfaction of the instructor

(NOTE: The official placings are 4-2-1-3, with cuts of 2, 4, 3.)

PART II — Evaluated to the satisfaction of the instructor

(NOTE: The following criteria are suggestions for evaluating student responses in both parts.)

- A. Did student have good strong lead statements?
- B. Did student use desirable as well as undesirable terms of comparison?
- C. Did student use grants?

Assignment Sheet #11 — Evaluated to the satisfaction of the instructor

(NOTE: The following criteria are suggestions for evaluating student responses.)

- A. Did student have a good strong lead statement?
- B. Did student use desirable as well as undesirable terms of comparison?
- C. Did student use grants?

Assignment Sheet #12 — Evaluated to the satisfaction of the instructor

(NOTE: The following criteria are suggestions for evaluating student responses.)

- A. Did student place the class correctly?
- B. Did student speak clearly and with a strong, convincing voice?
- C. Did student use good body mechanics?
- D. Did student present reasons in less than two minutes?

Assignment Sheet #13 — Evaluated to the satisfaction of the instructor

(NOTE: Instructor will need to check answers with resource materials.)

LIGHT HORSE BREEDS AND SELECTION UNIT VI

TEST

NAME _____

SCORE _____

1. Match to their correct definitions terms associated with light horse breeds and selection. Write the correct numbers in the blanks.

- | | | |
|---------|--|----------------------|
| _____a. | Male foal | 1. Mare |
| _____b. | Animals related by descent from common ancestors and visibly similar in most characteristics | 2. Filly |
| _____c. | Any class of horses exhibited under saddle | 3. Foal |
| _____d. | Mature male horse that has not been castrated | 4. Judging |
| _____e. | Mature male horse that has been castrated | 5. Stallion |
| _____f. | Female horse that has not reached reproduction age | 6. Colt |
| _____g. | Identifying strengths and weaknesses of an animal while comparing it to others | 7. Gelding |
| _____h. | Class of horses exhibited for purpose of judging them on conformation | 8. Breed |
| _____i. | Mature female horse | 9. Performance class |
| _____j. | Young horse under one year old | 10. Halter class |

TEST

2. Identify the following breeds of light horses. Write the correct names in the blanks.

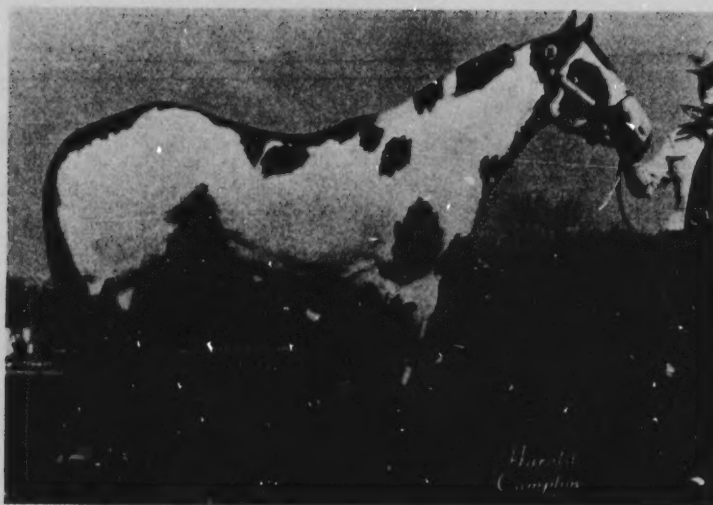


a. _____



b. _____

TEST

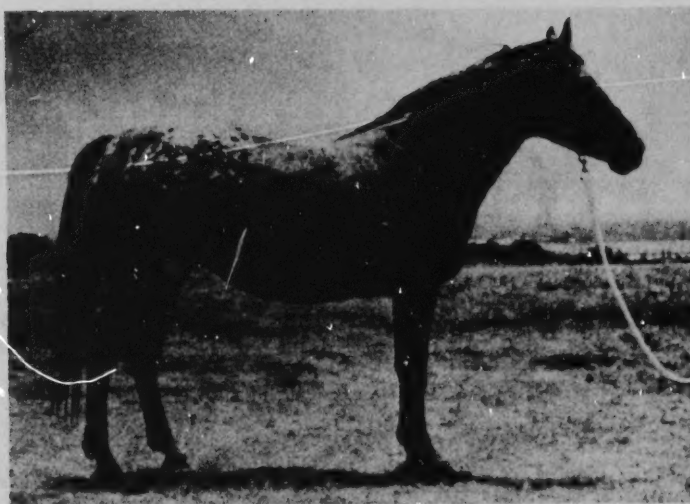


c. _____



d. _____

TEST



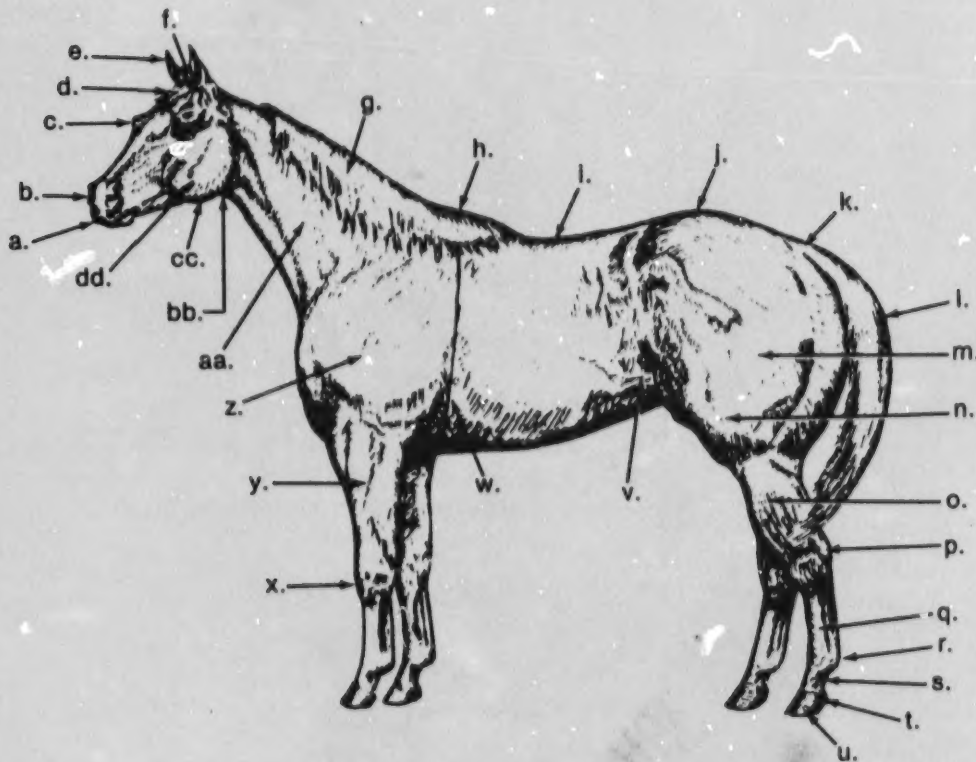
e.



f.

TEST

3. Label the parts of a horse. Write the correct names in the blanks.



a.	_____	h.	_____
b.	_____	i.	_____
c.	_____	j.	_____
d.	_____	k.	_____
e.	_____	l.	_____
f.	_____	m.	_____
g.	_____	n.	_____

TEST

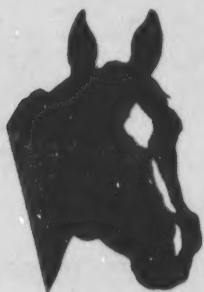
o. _____	vi. _____
p. _____	x. _____
q. _____	y. _____
r. _____	z. _____
s. _____	aa. _____
t. _____	bb. _____
u. _____	cc. _____
v. _____	dd. _____

4. Match types of horses to their uses. Write the correct numbers in the blanks.

- | | | |
|---------|---|------------|
| _____a. | Trained to perform at the walk, trot, slow-gait, canter, and rack for pleasure and exhibition | 1. Gaited |
| _____b. | Trained to compete against other horses by running, pacing, or trotting | 2. Jumping |
| _____c. | Trained to pull vehicles used for pleasure or exhibition | 3. Stock |
| _____d. | Trained to jump high obstacles for pleasure or exhibition | 4. Racing |
| _____e. | Trained to be used for pleasure, show, and general ranch work | 5. Harness |

TEST

5. Label the common head markings illustrated below. Write the correct names in the blanks.



a. _____



b. _____



c. _____



d. _____



e. _____



f. _____

TEST



g. _____

6. Label the common leg markings illustrated below. Write the correct names in the blanks.



a. _____



b. _____



c. _____



d. _____

TEST



e. _____

7. Match body colors to their correct descriptions. Write the correct numbers in the blanks.

- | | | |
|---------|---|-----------------------|
| _____a. | Light or dark spots over the basic body color | 1. Roan |
| _____b. | Dull golden color with black points on mane and tail | 2. Palomino |
| _____c. | Mixture of white and black hairs | 3. Pinto or paint |
| _____d. | Red, white, and yellow hairs intermingled | 4. Dun |
| _____e. | Black, white, and yellow hairs intermingled | 5. Buckskin |
| _____f. | Ranges from light washy yellow to a dark liver color | 6. Black |
| _____g. | Ranges from light yellowish or dark tan to almost brown | 7. Brown |
| _____h. | Dark to almost black with tan or brown hairs on the muzzle or flanks | 8. Dappled |
| _____i. | Black color with fine black hair on muzzle | 9. Chestnut or sorrel |
| _____j. | White in combination with any other color | 10. Bay |
| _____k. | Golden body color, varying from light yellow to a bright copper color, with a white mane and tail | 11. Appaloosa |
| _____l. | Solid color or mottled roan foreparts with lighter color over loin and hips with egg-shaped spots; some are white with spots over entire body | 12. Gray |
| _____m. | Form of dun-yellowish or bold body color with a black mane and tail, usually black on lower legs | 13. Blue roan |

TEST

8. Match to their correct definitions terms associated with judging. Write the correct numbers in the blanks.

_____a.	Fineness of features, fine hair, and an absence of coarseness	1. Balance
_____b.	Having a pleasing, graceful, alert general appearance	2. Coarse
_____c.	Overall appearance of the horse; the degree that all body parts are in proportion	3. Conformation
_____d.	Freedom from any abnormal deviation in structure or function that interferes with the usefulness of the horse	4. Type
_____e.	Arrangement of the body parts into distinct recognizable patterns	5. Quality
_____f.	Lacking quality and refinement	6. Soundness
_____g.	Serious abnormality that affects the serviceability of the horse	7. Stylish
_____h.	Structure and arrangement of parts as they form the body of the horse	8. Unsoundness
_____i.	Abnormality that does not affect the serviceability of the horse	9. Blemish
_____j.	Recognition that an animal has desirable traits, but that these traits are not acceptable to be used any higher in the class	10. Reasons
_____k.	Written or oral justification of how a class of animals was placed	11. Grant
_____l.	Points assigned to a judging class that separate animals by pairs	12. Cuts

9. Describe general traits to consider in judging a halter class of light horses.

- a. Type — _____

- b. Conformation — _____

TEST

- c. Action — _____

- d. Quality and style — _____

10. Select from the following lists specific traits or points to look for when judging from side, front, and rear views, while horse is travelling, and during close inspection. Write an "X" in the blank before each correct answer.

Side

- _____ a. Type and balance
- _____ b. Muscling
- _____ c. Alignment of feet and legs
- _____ d. Hair coat
- _____ e. Amount and kind of bone
- _____ f. Breed character
- _____ g. Standing incorrectly
- _____ h. Quality and smoothness
- _____ i. Style
- _____ j. Size
- _____ k. Slope of shoulder
- _____ l. Attitude
- _____ m. Length and strength of back
- _____ n. Length of rear quarter
- _____ o. Length and set of neck, head, and ears
- _____ p. Depth of heart girth

TEST

Front

- _____ a. Standing incorrectly
- _____ b. Muscling
- _____ c. Alignment of front feet and legs
- _____ d. Halter
- _____ e. Breed character
- _____ f. Quality and smoothness
- _____ g. Depth and width of chest

Rear

- _____ a. Muscling (stifle, gaskin)
- _____ b. Alignment of rear feet and legs
- _____ c. Length of tail
- _____ d. Hair coat
- _____ e. Quality and smoothness
- _____ f. Width

Movement

- _____ a. Disposition
- _____ b. Alignment of action
- _____ c. Handler movement
- _____ d. Ease and smoothness of action
- _____ e. Absence of lameness

Close inspection

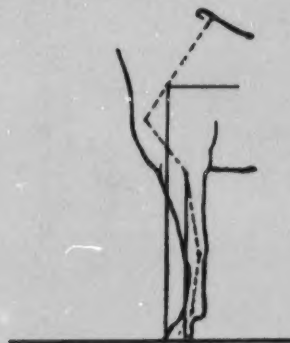
- _____ a. Soundness
- _____ b. Muscling
- _____ c. Cleanliness of horse
- _____ d. Quality of feet and legs
- _____ e. Improper trimming of feet
- _____ f. Withers

TEST

11. Label the common conformational faults of feet and legs illustrated below. Write the correct terms in the blanks.



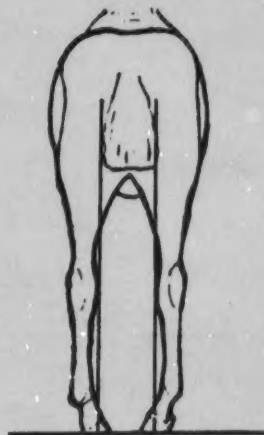
a. _____



b. _____



c. _____



d. _____

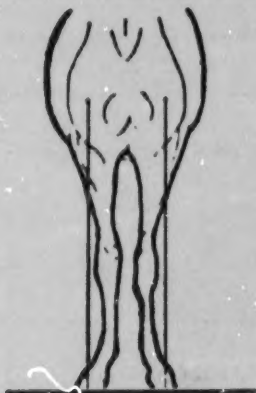
TEST



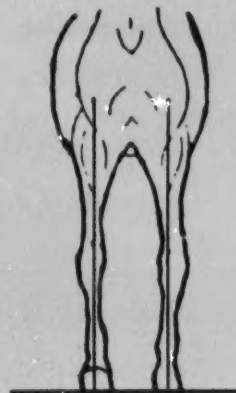
e. _____



f. _____



g. _____



h. _____

12. State the purpose of the FFA placing card.

13. Compute a placing score by working the following problem. You just placed a class 4-1-3-2. The official placings were 3-4-1-2 with cuts of 5, 4, 2. What is your score?

Your score = _____

TEST

14. Write terms of comparison used in judging a halter class of light horses. Below is a list of terms that describe desirable and undesirable comparisons. In the blank beside each term, write the correct opposite response.

- a. Smoother _____
- b. Plain _____
- c. Low-headed; high-headed _____
- d. Smoother shoulder _____
- e. Deeper in the heart _____
- f. Short croup _____
- g. Deeper-jointed _____
- h. Long cannons _____
- i. Deeper, more open heel _____
- j. Straighter legs _____
- k. Halting stride _____
- l. Toes out; toes in _____

15. State guidelines for taking notes for oral reasons for placings.

- a. _____
- b. _____

16. Select from the following list techniques for writing reasons for placings. Write an "X" in the blank before each correct answer.

- ☒ a. Describe horses rather than compare them
- ☒ b. Compare horses in logical sequence
- ☒ c. Arrange class into three pairs; top, middle, and bottom
- ☐ d. Talk about each horse in the class
- ☐ e. Conclude by saying "For these reasons, I placed this class . . ."
- ☐ f. Make reasons easily understood by official judge

TEST

- _____g. Start your reasons by saying, "I placed this class of (age), (breed), (sex)" and then give placings
 - _____h. Stress strong points of the top horse in each pair and then admit or grant any way the bottom horse in each pair may excel; repeat same order for second and third pair
17. Select from the following list techniques for giving oral reasons for placings. Write an "X" in the blank before each correct answer.
- _____a. Use notes when giving reasons
 - _____b. Upon conclusion, thank reason-taker and leave
 - _____c. Stay within the allowable two minutes
 - _____d. Keep reasons concise, using correct terminology and grammar
 - _____e. Stand squarely on both feet
 - _____f. Emphasize big differences between horses, stressing the comparisons in which the top animal in each pair is superior
 - _____g. Speak clearly
 - _____h. Stand approximately 4 to 8 feet from reason-taker
 - _____i. Deliver reasons in a convincing, truthful, and easily understood manner
 - _____j. Maintain eye contact with reason-taker

(NOTE: Test questions 18-22 list assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

- 18. Evaluate two horses for comparable advantages.
- 19. Judge halter classes of light horses.
- 20. Write a set of reasons for placing a class of light horses.
- 21. Give a set of oral reasons for placing a class of light horses.
- 22. Use resource material to locate information related to the breed association, origin, color, and characteristics of a light horse breed.

LIGHT HORSE BREEDS AND SELECTION
UNIT VI

ANSWERS TO TEST

- | | | | | |
|----|----|---|----|----|
| 1. | a. | 6 | f. | 2 |
| | b. | 8 | g. | 4 |
| | c. | 9 | h. | 10 |
| | d. | 5 | i. | 1 |
| | e. | 7 | j. | 3 |
-
- | | | |
|----|----|---------------|
| 2. | a. | Quarter horse |
| | b. | Thoroughbred |
| | c. | Paint |
| | d. | Arabian |
| | e. | Appaloosa |
| | f. | Morgan |
-
- | | | | | |
|----|----|----------|----|------------|
| 3. | a. | Muzzle | l. | Tail |
| | b. | Nostril | m. | Hip |
| | c. | Eye | n. | Stifle |
| | d. | Foretop | o. | Gaskin |
| | e. | Ear | p. | Hock |
| | f. | Poll | q. | Cannon |
| | g. | Mane | r. | Fetlock |
| | h. | Withers | s. | Pastern |
| | i. | Back | t. | Coronet |
| | j. | Croup | u. | Hoof |
| | k. | Tailhead | v. | Rear flank |

ANSWERS TO TEST

- | | | | |
|----|-------------|-----|-------------|
| w. | Heart girth | aa. | Neck |
| x. | Knee | bb. | Throatlatch |
| y. | Forearm | cc. | Jaw |
| z. | Shoulder | dd. | Cheek |
-
4. a. 1
b. 4
c. 5
d. 2
e. 3
5. a. Star, strip, and snip
b. Star and strip
c. Strip
d. Snip
e. Star
f. Bald face
g. Blaze
6. a. Stocking
b. Sock or half-stockings
c. Pastern
d. Half pastern
e. Coronet

ANSWERS TO TEST

- | | | | | |
|-----|--|--|----|----|
| 7. | a. | 8 | h. | 7 |
| | b. | 4 | i. | 6 |
| | c. | 12 | j. | 3 |
| | d. | 1 | k. | 2 |
| | e. | 13 | l. | 11 |
| | f. | 9 | m. | 5 |
| | g. | 10 | | |
| | | | | |
| 8. | a. | 5 | g. | 8 |
| | b. | 7 | h. | 3 |
| | c. | 1 | i. | 9 |
| | d. | 6 | j. | 11 |
| | e. | 4 | k. | 10 |
| | f. | 2 | l. | 12 |
| | | | | |
| 9. | Description should include the following | | | |
| | a. | Type — Overall characteristics that make an animal useful for its intended purpose | | |
| | b. | Conformation — Correctness of structure in feet and legs, muscling, and the overall physical structure | | |
| | c. | Action — Usefulness and soundness of animal | | |
| | d. | Quality and style — Impression determined by refinement, alertness, carriage, and sex character | | |
| | | | | |
| 10. | Side — a, b, c, e, f, h, i, j, k, m, n, o, p | | | |
| | Front — b, c, e, f, g | | | |
| | Rear — a, b, e, f | | | |
| | Movement — b, d, e | | | |
| | Close inspection — a, b, d, f | | | |

ANSWERS TO TEST

11. a. Toes in
b. Back at the knee
c. In at the hock
d. Out at the hock
e. In at the knee
f. Over at the knee
g. Toes out
h. Out at the knee
12. To identify the judge and to record the placing
13. 36
14. a. Rough
b. More stylish
c. More desirable set to neck
d. Rough shoulder
e. Shallow in the heart
f. Longer croup
g. Shallow jointed
h. Shorter cannons
i. Shallow heel; narrow heel
j. Crooked legs
k. More forceful stride
l. Straighter feet
15. a. Make notes identifying each horse in class
b. Develop chart with placing, reasons, grants, and faults

ANSWEHS TO TEST

16. b, c, f, g, h
17. b, c, d, e, f, g, h, i, j
18. Evaluated to the satisfaction of the instructor
19. Evaluated to the satisfaction of the instructor
20. Evaluated to the satisfaction of the instructor
21. Evaluated to the satisfaction of the instructor
22. Evaluated to the satisfaction of the instructor

LIVESTOCK FEEDING UNIT VII

UNIT OBJECTIVE

After completing this unit, the student should be able to select types and quantities of feeds for various feeding situations; balance a two-feed ration for protein, using the Pearson Square Method; and open a sewn feed sack. The student will show this knowledge by completing the assignment sheets, job sheet, and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with livestock feeding.
2. Match nutrients to their correct basic functions.
3. List quantities in which feeds may be purchased.
4. Select from a list factors to consider when purchasing feed.
5. List commercial feed tag requirements.
6. State rules for calculating price per pound of protein in feed.
7. Match types of performance rations to their correct definitions.
8. Match swine-feeding situations to their correct thumb rules.
9. Match sheep-feeding situations to their correct thumb rules.
10. Match beef-feeding situations to their correct thumb rules.
11. Match dairy-cattle-feeding situations to their correct thumb rules.
12. Match light-horse-feeding situations to their correct thumb rules.
13. Balance a ration, using the Pearson Square Method.
14. Survey livestock-feeding information in the community.
15. Calculate the price per pound of protein in feed.
16. Use thumb rules to determine feed for various livestock.
17. Demonstrate the ability to open a sewn feed sack.

LIVESTOCK FEEDING UNIT VII

SUGGESTED ACTIVITIES

I. Unit contents

- A. Objective sheet
- B. Suggested activities
- C. Transparency master: TM #1 — Commercial Feed Tag
- D. Information sheet
- E. Assignment sheets
 - 1. Assignment Sheet #1 — Survey Livestock-Feeding Information in the Community
 - 2. Assignment Sheet #2 — Calculate the Price per Pound of Protein in Feed
 - 3. Assignment Sheet #3 — Use Thumb Rules to Determine Feed for Various Livestock
 - 4. Assignment Sheet #4 — Balance Rations, Using the Pearson Square Method
- F. Answers to assignment sheets
- G. Job Sheet #1 — Open a Sewn Feed Sack
- H. Test
- I. Answers to test

II. Instructor's guide

- A. Order materials needed to supplement unit.
 - 1. Feed tags, protein supplements, feed samples, and samples of various grains, hays, and other roughages applicable for all types of livestock owned by students or for livestock that students might select
(NOTE: Samples are available from your local feed supplier.)
 - 2. Sewn burlap or paper feed sacks
(NOTE: Order an ample supply to allow students to complete job sheet.)
 - 3. Pamphlets and brochures from commercial feed suppliers that cover feeds for particular species of livestock

SUGGESTED ACTIVITIES

- B. Obtain or make transparency.

(NOTE: Transparency is available from the Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)

- C. Introduce unit by stressing importance of feeding livestock properly.

SUGGESTIONS:

- Remind students that domestic farm animals are usually completely dependent upon humans for their nutritive needs.
- Explain how proper livestock feeding enhances profits.
- Introduce Step C of Assignment Sheet #1 so that students can begin working on its completion. Point out various employment opportunities related to livestock feeding that exist for individuals who enjoy caring for animals.

- D. Provide students with objective sheet.

- E. Discuss unit and specific objectives.

SUGGESTIONS:

- Relate the information to be covered in the unit to the students' own livestock feeding situations.
- Emphasize that information covered in the unit will help the student make decisions regarding purchases of prepared feeds, best feed values, and proper mixes for their own rations.

- F. Provide students with information, assignment, and job sheets.

- G. Discuss information, assignment, and job sheets.

1. Discuss terms and definitions associated with livestock feeding; use Section I of Information Sheet.

(NOTE: More in-depth study of some terms is included in *Vocational Agriculture II: Basic Core*.)

SUGGESTIONS:

- Show students samples of concentrates, roughages, and protein supplements.
- Introduce Assignment Sheet #1, Steps A and B after discussing concentrates and roughages.

SUGGESTED ACTIVITIES

2. Use Section II of the Information Sheet to discuss nutrients and their basic functions.

SUGGESTIONS:

- Stress to students that each nutrient is important for a balanced ration.
 - Point out that most commercially prepared feeds contain all of the essential nutrients in the correct proportions.
3. Discuss and explain factors that affect feed purchases; use Information Sheet, Sections III through VII, and Assignment Sheet #2. Use Transparency #1 when discussing Section V.

SUGGESTIONS:

- Invite a local feed supplier to show quantities in which feeds can be purchased. Make a copy of Information Sheet, Sections II, III, and IV as a guideline for the resource person. Have students prepare questions that they would like the resource person to answer.
- Lead a class discussion to help students relate performance rations to species, ages, and situations. Use chalkboard to record performance rations.

EXAMPLE: Growing ration

- a. Steer and helper calves — From weaning age to 1,000 pounds
 - b. Pigs — From weaning to 170 pounds
 - c. Lambs — From weaning to 100 pounds
 - d. Dairy calves — From four to eighteen months
 - e. Colts — After weaning to two years
- Work sample problems for Section VI, and introduce Assignment Sheet #2.
4. Demonstrate procedures outlined in Job Sheet #1. Show the economic savings associated with opening burlap feed sacks efficiently. Provide students with sufficient time and an ample number of sacks to develop proficiency.

SUGGESTED ACTIVITIES

5. Discuss the efficiency of applying thumb rules in various feeding situations; use Information Sheet, Sections VIII through XII and Assignment Sheet #3.

SUGGESTIONS:

- Stress the importance of thumb rules for an inexperienced feeder.
 - Suggest that students post thumb rules in their feed rooms for a handy reference.
6. Use Section XIII of the Information Sheet and Assignment Sheet #4 to help students use the Pearson Square Method to balance a ration.

H. Give test.

III. Unit references

- A. Braker, Clifton R. "Pete." *Vocational Agriculture I*, rev. ed. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1974.
- B. Diggins, Ronald V., Clarence E. Bundy, and Virgil W. Christensen. *Dairy Production*, 4th ed. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1979.
- C. Ensminger, M. E. *Beef Cattle Science*. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1976.
- D. Gillespie, James R. *Modern Livestock and Poultry Production*, 2nd ed. Albany, New York: Delmar Publishers, Inc., 1983.

Commercial Feed Tag



50 Pounds (Net) B&D BRAND SPECIAL CATTLE CUBES

GUARANTEED ANALYSIS

Crude Protein not less than	20.00 Percent
Crude Fat not less than	2.50 Percent
Crude Fiber not more than	14.00 Percent

INGREDIENTS: Composed of grain products, plant protein products, processed grain by-products, animal protein products, dehydrated alfalfa meal (preserved with ethoxyquin), mixed screenings 10%, rice mill by-products 10%, cane molasses, calcium carbonate, defluorinated phosphate, salt, and *traces* of manganous oxide, zinc oxide, ferrous sulphate, copper sulphate, calcium iodate, and cobalt carbonate. (Total added mineral ingredients less than 5%.)

Manufactured by

FEEDING DIRECTIONS: A cattle supplement for winter range.

**LIVESTOCK FEEDING
UNIT VII****INFORMATION SHEET****I. Terms and definitions**

- A. Ration — Feed allowed an animal for a twenty-four-hour period
- B. Balanced ration — Ration that supplies all necessary nutrients in proper amounts
- C. Nutrient — Class of food that aids in support of life; becomes a part of the body cells

EXAMPLES: Vitamins, minerals, protein, fats, carbohydrates, water

(NOTE: Animals need many different kinds of nutrients in the right proportions. Too much of one and not enough of another may result in poor health and high feed costs; a lack of one or more nutrients may slow normal growth or production.)

- D. Ruminant — Cud-chewing animal that has more than one compartment in its stomach

EXAMPLES: Cattle, sheep, goats

- E. Monogastric — Pertaining to animals that have one stomach compartment
- F. Total digestible nutrients (TDN) — Percentage of all digestible matter, except minerals, in a feed
- G. Palatable — Of a desirable taste
- H. Fiber — Tough part of feed that is not very digestible
- I. Concentrate — Feed high in TDN and low in fiber

EXAMPLE: At least 75 percent TDN and no more than 15 percent fiber

- J. Roughage — Feed low in TDN and high in fiber

EXAMPLES: Grass, hays, silages

- K. Commercial ration — Prepared feed, usually a balanced ration, that can be purchased for specific feeding purposes

(NOTE: Commercial rations are usually designed for specific purposes such as maintenance, growth, fattening, production, reproduction, and work.)

INFORMATION SHEET

- L. Creep feed — Additional feed for young animals that supplements nutrients provided by mother's milk or other sources
- M. Medicated feed — Any type of ration to which medicine or antibiotics have been added as a disease preventive
- N. Cereal grains — Various grain concentrates that are sometimes used in rations

EXAMPLES: Corn, wheat, oats, barley, rye, rice

- O. Protein supplement — High-protein additive that is sometimes used to increase a ration's protein level

EXAMPLES: Soybean meal, cottonseed meal, linseed meal, tankage and meat scraps, fish meals

- P. Feed additive — General term for any component added to a ration for a specific purpose

EXAMPLES: Protein supplements, medications, tranquilizers, hormones, special vitamins, special minerals, salt

- Q. Flushing — Feeding practice used just prior to breeding a female animal; improves animal's condition

- R. Gestation — Period of pregnancy

II. Nutrients and their basic functions

(NOTE: All nutrients are important to the animal because each nutrient has a specific function in the animal's body. Problems may occur when there is a deficiency of any one nutrient.)

A. Water

1. Dissolves and carries other nutrients through body
2. Regulates body temperature
3. Initiates necessary chemical reactions in the body

(NOTE: The amount of water in an animal's body may range from 40 to 80 percent.)

B. Protein

1. Supplies material to build body tissues, hooves, horns, hair, and skin
2. Is essential for fetal development in pregnant animals

INFORMATION SHEET

C. Carbohydrates

1. Produce body heat to help keep animal warm
2. Provide energy for muscle movement

EXAMPLES: Heartbeat, walking, breathing, digestive contractions

3. Produce fat

D. Fats

1. Provide energy and body heat
2. Carry fat-soluble vitamins that are in feed

E. Minerals

1. Provide material for growth of bones, teeth, and tissue
2. Regulate many of body's vital chemical processes
3. Aid in muscular activities, reproduction, digestion, and tissue repair

F. Vitamins

1. Help in tooth and bone formation
2. Help prevent infection
3. Aid body's chemical reactions
4. Are necessary for many special body functions

III. Quantities in which feeds may be purchased

A. Bulk

(NOTE: Feed sold in bulk quantities is usually measured by the ton and is bagged for the purchaser to haul, or delivered to the purchaser and augered into a storage facility. The bags may be returned for a deposit if kept in good condition. Price per hundredweight is usually discounted on bulk orders.)

B. Fifty-pound paper sacks

(NOTE: The price per hundredweight is usually discounted on larger quantities purchased.)

INFORMATION SHEET

IV. Factors to consider when purchasing feed

A. Type of livestock being fed

EXAMPLE: A sheep ration should not be fed to swine.

B. Protein level

(NOTE: Protein level is usually the most important consideration in purchasing feed. Protein level also greatly affects the price of the feed.)

C. Performance expected from livestock

EXAMPLES: Maintenance, growth, fattening, production, reproduction, work

D. Quantity

(NOTE: Purchase only enough feed for a two- to three-week period. Old feed becomes stale and less palatable.)

E. Condition and size of storage facilities

(NOTE: Storage facilities should be adequate to hold quantity of feed purchased, and should not allow access of rats, mice, or birds.)

F. Price in relation to feeding value

(NOTE: Often the lowest-priced feed does not provide the best value because the quality may be poor.)

EXAMPLE: Lower-priced cattle cubes may be priced lower because they are low in protein and high in fiber content.

INFORMATION SHEET

V. Commercial feed tag requirements

(NOTE: It is important to select the proper feed for a particular feeding situation. In most cases, purchasing a commercially balanced ration is the best approach to meet the animal's needs. Protein level, usually the item of greatest concern, can be determined by reading the feed tag. The law requires feed tags to list the guaranteed analysis of the feed in terms of protein, fat, and fiber percentages. See Figures 1 and 2.)

EXAMPLES:

FIGURE 1

50 Pounds (Net) B&D BRAND SPECIAL CATTLE CUBES

GUARANTEED ANALYSIS

Crude Protein not less than	20.00 Percent
Crude Fat not less than	2.50 Percent
Crude Fiber not more than	14.00 Percent

○ **INGREDIENTS:** Composed of grain products, plant protein products, processed grain by-products, animal protein products, dehydrated alfalfa meal (preserved with ethoxyquin), mixed screenings 10%, rice mill by-products 10%, cane molasses, calcium carbonate, defluorinated phosphate, salt, and *traces* of manganous oxide, zinc oxide, ferrous sulphate, copper sulphate, calcium iodate, and cobalt carbonate. (Total added mineral ingredients less than 5%.)

Manufactured by

FEEDING DIRECTIONS: A cattle supplement for winter range.

INFORMATION SHEET

FIGURE 2

32% RANGE & BREEDER CUBES

Natural Protein
Guaranteed Analysis

Crude Protein, not less than	32.00%
Crude Fat, not less than	2.00%
Crude Fiber, not more than	10.00%

INGREDIENTS: Grain products, plant protein products, processed grain by-products, forage products, cane molasses, smectite-vermiculite, vitamin E supplement, vitamin A supplement (stability improved), d-activated animal sterol (source of vitamin D3), calcium carbonate, ferrous sulfate, zinc oxide, manganous oxide, copper sulfate, cobalt sulfate, ethylene diamine dihydriodide, BHT and ethoxyquin (a preservative).

FEEDING DIRECTIONS: Feed 2 to 4 lbs. per head per day depending upon quality of roughage, age, and stage of reproduction of the animals.

Courtesy Stillwater Milling Company, Stillwater, Oklahoma.

A. Minimum crude protein percentage

B. Minimum crude fat percentage

C. Maximum crude fiber percentage

VI. Rules for calculating price per pound of protein in feed

(NOTE: While a particular feed may be priced less per pound than another feed, it may actually be more expensive than the other feed when the price per pound of protein it provides is calculated.)

A. Calculate actual pounds of protein by multiplying total pounds of feed by percent of total protein

EXAMPLE: You are considering paying \$5 for 50 pounds of cattle cubes that contain 20 percent protein.

Pounds of Protein = Total Pounds Feed x Percent Total Protein

$$= 50 \times 0.20$$

$$= 10$$

INFORMATION SHEET

- B. Find price per pound of protein by dividing total cost of feed by total pounds of protein

$$\begin{aligned}
 \text{EXAMPLE: Price per Pound of Protein} &= \frac{\text{Total Cost of Feed}}{\text{Total Pounds of Protein}} \\
 &= \frac{\$5.00}{10} \\
 &= \$0.50
 \end{aligned}$$

VII. Definitions of types of performance rations

- A. Maintenance ration — Ration that supplies only those nutrients needed to maintain animal's normal body functions

(NOTE: This type of ration is intended to maintain normal body weight. It does not allow for nutrients needed for growing, fattening, production, reproduction, or work.)

- B. Growing ration — Ration that supplies nutrients above maintenance level; allows animal to build and expand body parts

(NOTE: Animals must have additional nutrients beyond the maintenance level in order for the body to grow and mature. Growing ration is usually fed to physically immature animals.)

- C. Fattening ration — Ration that supplies nutrients used by animal to produce fat after maintenance and growing requirements are met

(NOTE: Animals intended for slaughter need certain amounts of fat deposits in their meat to make the meat more desirable. Feeds high in carbohydrates and fats are used for fattening.)

- D. Production ration — Ration that supplies nutrients used by animal to produce items such as milk, eggs, or wool

- E. Reproduction ration — Ration that supplies additional nutrients needed by animal during breeding activities and pregnancy

- F. Work ration — Ration that supplies additional nutrients needed by working animals

EXAMPLE: Horses work when they are ridden; they need a work ration.

INFORMATION SHEET

VIII. Thumb rules for swine-feeding situations

(NOTE: There are a number of generally accepted rules for feeding swine. The following rules are based on a per-day amount, and should serve as general guidelines.)

- A. Sows and gilts, flushing two to three weeks prior to breeding — 6 to 8 pounds of 14 percent protein ration
- B. Bred sows and gilts — 4 to 6 pounds of 14 percent protein ration
- C. Sows nursing litters — 10 to 15 pounds of 14 to 15 percent protein ration
(NOTE: Special limited feeding is required just prior to and after farrowing.)
- D. Nursing pigs from two weeks old to weaning — Free choice of 16 to 18 percent creep ration
- E. Pigs from 50 pounds to 100 pounds — 6 percent of body weight of 16 percent protein ration
- F. Pigs from 100 pounds to 170 pounds — 5 percent of body weight of 14 percent protein ration
- G. Pigs from 170 pounds to 220-pound market weight — 4 percent of body weight of 13 percent protein ration
- H. Boars on maintenance — 4 to 6 pounds of 14 percent protein ration
- I. Boars during breeding season — 6 to 8 pounds of 16 percent protein ration

IX. Thumb rules for sheep-feeding situations

(NOTE: There are a number of generally accepted rules for feeding sheep. The following rules are based on per-day amounts and should serve as general guidelines. The rules concerning ewes are based on ewes weighing 130 to 150 pounds, and rules concerning rams are based on rams weighing 175 to 225 pounds.)

- A. Ewes on maintenance — 3 pounds of alfalfa/grass mixed hay
- B. Ewes, flushing two to three weeks prior to breeding — 3 pounds of alfalfa/grass mixed hay, plus $\frac{1}{2}$ to $\frac{3}{4}$ pound of 12 percent protein ration
- C. Ewes during first fifteen weeks of gestation — 3.5 pounds of alfalfa/grass mixed hay
- D. Ewes during last six weeks of gestation — 4 pounds of alfalfa/grass mixed hay, plus $\frac{1}{2}$ pound of 12 percent protein ration

INFORMATION SHEET

- E. Ewes during first eight weeks of lactation — 4.5 pounds of alfalfa/grass mixed hay, plus 2 pounds of 12 percent protein ration
- F. Lambs from birth to eight weeks — Free choice of 15 percent protein ration
- G. Lambs from eight weeks to 75 pounds — Free choice of 16 to 18 percent protein ration
- H. Lambs from 75 pounds to 120-pound market weight — 3 to 4 pounds of 13 to 15 percent protein ration

(NOTE: This thumb rule is based on lambs being hand-fed on a regular schedule twice a day.)

- I. Rams on maintenance — 5 pounds of alfalfa/grass mixed hay
- J. Rams during breeding season — 5 pounds of alfalfa/grass mixed hay, plus 2 pounds of 12 percent protein ration

X. Thumb rules for beef-feeding situations

(NOTE: As a general rule, sufficient good-quality pasture grasses are all that is needed for cows [with or without calves], weaned and growing steers and heifers, and bulls. Winter feeding and finishing feeding, however, require special feeding considerations. Free-choice vitamin, mineral, and salt mix should be available on a year-round basis. Thumb rules concerning cows are based on a 900- to 1000-pound cow and per-day amounts.)

- A. Dry, pregnant cows and bred heifers during winter feeding when grazing is not possible — 20 pounds of alfalfa/grass mixed hay
- B. Dry, pregnant cows and bred heifers during winter feeding when dry grass grazing is possible — 2 pounds of 30 to 40 percent protein supplement

(NOTE: The protein supplement is usually in the form of cattle cubes. As protein level of cubes goes down, the quantity fed should go up.)

EXAMPLE: Feed 2 pounds of 40 percent cubes or 4 pounds of 20 percent cubes.

- C. Cows nursing calves during winter feeding when grazing is not possible — 30 pounds of alfalfa/grass mixed hay
- D. Cows nursing calves during winter feeding when dry grass grazing is possible — 3 pounds of 30 to 40 percent protein supplement

(NOTE: The same rule applies for lesser protein level as in note for B.)

INFORMATION SHEET

E. Steers and heifers from weaning to finish

1. First two days on feed — Free choice of high-quality grass hay
2. Third day to finish — Add 2 pounds of concentrate ration; gradually increase concentrate and decrease high-quality grass hay until concentrate is leveled off at 2.5 percent of body weight, and grass hay is leveled off at 2 to 4 pounds

(NOTE: Amounts of concentrate should be what the steer will clean up in 30 to 45 minutes twice daily. For example, a 600-pound steer should eat about 15 pounds of concentrates daily, 7.5 pounds in the morning and 7.5 pounds at night.)

EXAMPLE: 600-pound steer
 $600 \text{ pounds} \times 0.025 = 15 \text{ pounds of concentrate}$

F. Young bulis from weaning to fifteen months — 2.5 percent of their body weight of 50 percent concentrate and 50 percent roughage

G. Mature bulls during winter feeding — Free choice of alfalfa hay, plus 4 pounds of ground or rolled grain and 1 pound of 32 percent protein supplement in the form of cattle cubes

XI. Thumb rules for dairy-cattle-feeding situations

(NOTE: There are a number of generally accepted rules for feeding dairy cattle. The following rules are based on per-day amounts and should serve as general guidelines. Exceptionally productive cows may need more feed than that listed.)

A. Cows in production, not on pasture — Free choice of good-quality roughage, plus 1 pound of 14 to 16 percent protein concentrate for each 4 pounds of milk produced each day

EXAMPLE: Concentrate requirement for cow producing 50 pounds of milk per day
 $50 \text{ pounds of milk} \div 4 = 12.5 \text{ pounds of concentrate}$

B. Cows in production, on pasture — 1 pound of 14 to 16 percent protein concentrate for each 3 pounds of milk produced over 30 pounds each day

EXAMPLE: Concentrate requirement for cow producing 50 pounds of milk per day
 $50 - 30 = 20 \text{ pounds produced over 30}$
 $20 \div 3 = 6.6 \text{ pounds of 14 to 16 percent concentrate}$

INFORMATION SHEET

C. Dry cows — Good pasture or free choice of high-quality alfalfa hay, plus 10 pounds of 10 percent protein in grain mixture

D. Mature bulls, and bull calves four months old and over — 1 pound of hay and 1/2 pound of concentrate per 100 pounds of body weight

(CAUTION: Do not feed rations for lactating cows to mature bulls. The additional calcium causes bones to fuse.)

E. Heifers on pasture, four months old and older — 1/2 pound of grain concentrate per 100 pounds of body weight, not to exceed 4 to 6 pounds

(NOTE: Any of the common grains or grain mixtures used for dairy-cattle feeding are sufficient.)

F. Heifers in drylot, four months old and older — Free choice of high-quality alfalfa hay, plus 1 percent of body weight in grain concentrate

G. Calves from birth to four months

1. First five days — Mother's milk
2. Next three weeks — 1 pound whole milk for each 10 pounds of body weight
3. Ten days old — Begin dry calf starter ration
4. Seven weeks old — Discontinue milk and feed 5 pounds calf starter
5. Seven weeks to four months — Free choice of good-quality alfalfa hay, plus 2 to 4 pounds of concentrate mix

XII. Thumb rules for light-horse-feeding situations

(NOTE: Horses are fed according to their size, stage of growth, condition, and the amount of work they perform. Salt should be fed free choice. Grain for horses usually is considered to be good-quality oats, while hay may be good-quality grass hay. If alfalfa hay is fed, it should be limited to approximately half of the roughage. The following rules are based on per-day amounts, and should serve as general guidelines.)

A. Idle mature horses — 1.5 to 2 pounds of roughage per 100 pounds of body weight

INFORMATION SHEET

- B. Mature horses performing one to three hours of light work per day — 1.25 to 1.5 pounds of roughage per 100 pounds of body weight, plus 0.5 to 0.75 pounds of grain per 100 pounds of body weight

EXAMPLES: Daily roughage for a 1,000-pound horse —

$$\begin{aligned}\text{Roughage} &= \frac{\text{Body Weight}}{100} \times 1.5 \text{ Pounds Roughage} \\ &= \frac{1000}{100} \times 1.5 \\ &= 10 \times 1.5 \\ &= 15 \text{ pounds}\end{aligned}$$

Daily grain for a 1,000-pound horse —

$$\begin{aligned}\text{Grain} &= \frac{\text{Body Weight}}{100} \times 0.75 \text{ Pounds Grain} \\ &= \frac{1000}{100} \times 0.75 \\ &= 10 \times 0.75 \\ &= 7.5 \text{ pounds}\end{aligned}$$

- C. Pregnant mares — 1 to 1.5 pounds of roughage per 100 pounds of body weight, plus 0.5 to 1.5 pounds of grain per 100 pounds of body weight
- D. Idle mares nursing foals — 1.5 pounds of roughage per 100 pounds of body weight, plus 0.33 pounds of grain per 100 pounds of body weight
- E. Foals before weaning — 0.5 to 0.75 pounds of roughage per 100 pounds of body weight, plus 0.5 to 0.75 pounds of grain per 100 pounds of body weight
- F. Growing colts after weaning — 1.5 to 2 pounds of roughage per 100 pounds of body weight, plus 1 to 1.5 pounds of grain per 100 pounds of body weight
- G. Stallions during breeding season — 1 to 1.5 pounds of roughage per 100 pounds of body weight, plus 0.75 to 1.5 pounds of grain per 100 pounds of body weight

XIII. Balancing a ration, using the Pearson Square Method (Figures 3-12)

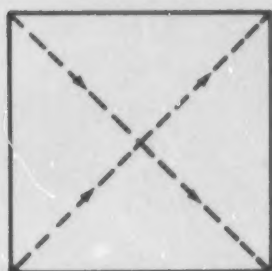
(NOTE: To balance a ration, combine a grain and a protein supplement in proportion to the desired level of protein. The following method shows how. For this method to work, the desired protein level must be a number between the protein levels of the two feeds being used; if it is not, select a different feed combination.)

INFORMATION SHEET

- A. Draw a square with dotted lines connecting opposite corners, and arrows on dotted lines pointing to right corners

EXAMPLE:

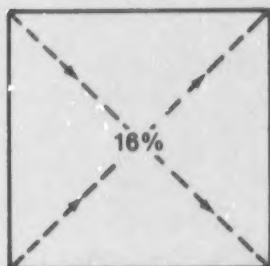
FIGURE 3



- B. Write the desired protein level inside the square

EXAMPLE:

FIGURE 4



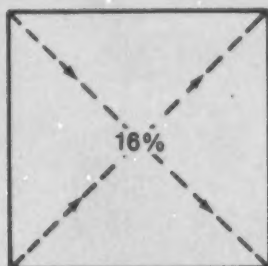
INFORMATION SHEET

- C. Write one type of feed outside each top corner

EXAMPLE:

FIGURE 5

Soybean Meal



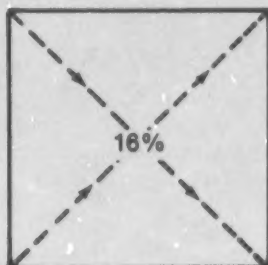
Soybean Meal

- D. Write the other type of feed outside each bottom corner

EXAMPLE:

FIGURE 6

Soybean Meal



Soybean Meal

Milo

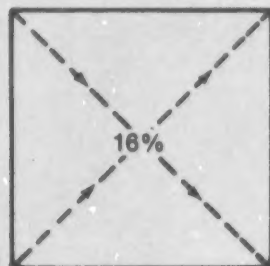
Milo

- E. Write the percentage of protein in each feed beside the two left corners

EXAMPLE:

FIGURE 7

44% Soybean Meal



Soybean Meal

11.3% Milo

Milo

INFORMATION SHEET

- F. Using the numbers from the desired protein level inside the square and the percentage of protein from the top left corner, subtract the smaller number from the larger

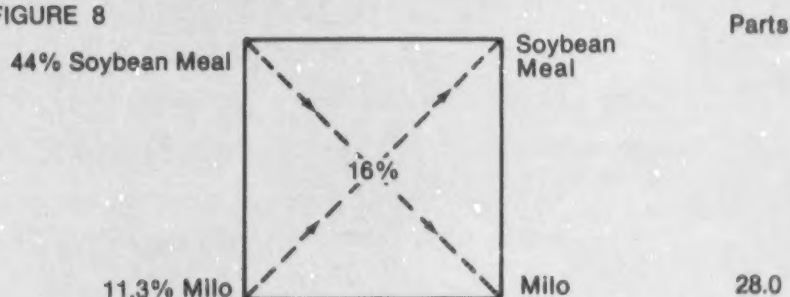
EXAMPLE: $44 - 16 = 28$

- G. Place the result of Step F beside the bottom right corner, following the dotted line from top left to bottom right corner

(NOTE: This number is how many parts of the feed in bottom corner are needed to balance the ration. The higher the protein level of the feed used, the fewer parts of the feed will be needed to balance the ration.)

EXAMPLE:

FIGURE 8



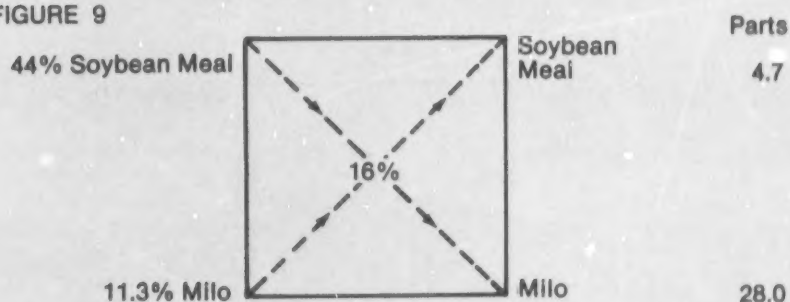
- H. Repeat Step F, using the numbers from desired protein level and percentage of protein in bottom left corner

EXAMPLE: $16 - 11.3 = 4.7$

- I. Place the result beside top right corner, following dotted line from bottom left to top right corner

EXAMPLE:

FIGURE 9



INFORMATION SHEET

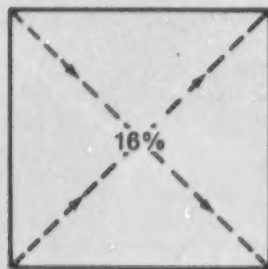
- J. Add the two numbers in the right corners to get the total parts of feed needed

EXAMPLE:

FIGURE 10

44% Soybean Meal

11.3% Milo



Soybean Meal

Milo

Parts
4.7

28.0

Total 32.7

- K. Determine the percentage of each feed needed by dividing the number of parts of each feed by the total parts

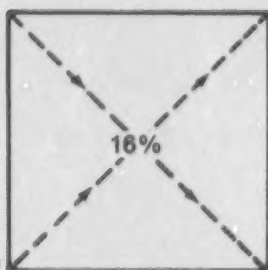
EXAMPLE: $4.7 \div 32.7 = 0.14$ (14% soybean meal)

$28 \div 32.7 = 0.86$ (86% milo)

FIGURE 11

44% Soybean Meal

11.3% Milo



Soybean Meal

Milo

Parts
4.7

28.0

Total 32.7

Percentage
14%

86%

100%

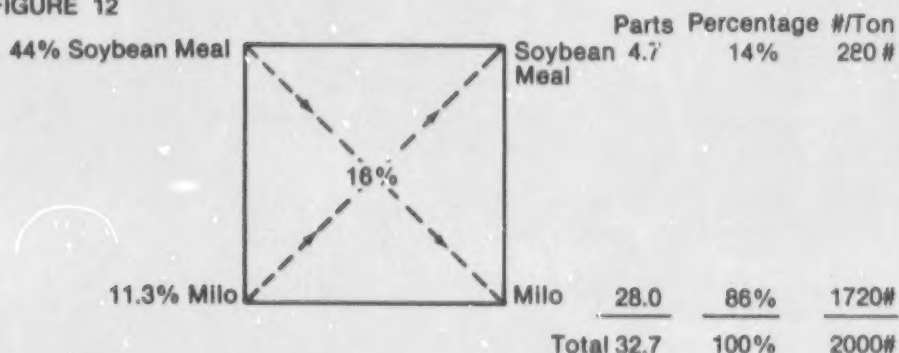
INFORMATION SHEET

- L Determine the number of pounds of each feed needed to provide desired amount of balanced ration by multiplying the percentage of each feed times total amount of ration desired

EXAMPLE: $0.14 \times 2000 = 280$
 14 percent of 2000 pounds of feed is 280 pounds of soybean meal

$0.86 \times 2000 = 1720$
 86 percent of 2000 pounds of feed is 1720 pounds of milo

FIGURE 12



LIVESTOCK FEEDING
UNIT VIIASSIGNMENT SHEET #1 — SURVEY LIVESTOCK-FEEDING INFORMATION
IN THE COMMUNITY

NAME _____ SCORE _____

This assignment sheet is designed to help you become familiar with the livestock feed industry in your community.

Obtain the following feed information by interviewing a person in your community who is involved in the feed industry or in animal nutrition, by taking notes on the information given by a resource person who visits your class, or by participating in a field trip to a local feed industry or supplier.

A. Identify five concentrates available in your area as livestock feeds.

1. _____
2. _____
3. _____
4. _____
5. _____

B. Identify the five most commonly used roughages in your area.

1. _____
2. _____
3. _____
4. _____
5. _____

C. Identify and describe two occupations in your community that are related to the feed industry and animal nutrition.

1. Occupational title _____
Description _____

ASSIGNMENT SHEET #1

2. Occupational title _____
Description _____

LIVESTOCK FEEDING
UNIT VIIASSIGNMENT SHEET #2 — CALCULATE THE PRICE PER POUND
OF PROTEIN IN FEED

NAME _____ SCORE _____

Often, price alone is not the only factor to consider in purchasing feed. Because protein level of feed and actual protein intake by the animal are major considerations, it is very important to calculate the price per pound of protein in feed to determine the best value.

Calculate actual pounds of protein and price per pound of protein in the following problems. Refer to Information Sheet, Section VI if necessary. Show your work.

- A. You are considering paying \$210 for 1 ton of cattle cubes containing 38 percent protein. How many actual pounds of protein will you receive? How much will you pay per pound of protein?

1. Pounds of protein = _____
2. Price per pound of protein = _____

- B. You are considering buying 1 ton of bulk grain (either barley or oats) to mix your own ration. Your main concern is the price per pound of protein. Barley costs \$120 per ton and contains 11 percent protein. Oats cost \$154 per ton and contain 12 percent protein. Which grain will be the best buy?

1. Actual pounds of protein in 1 ton of barley = _____
2. Actual pounds of protein in 1 ton of oats = _____
3. Price per pound of protein for barley = _____
4. Price per pound of protein for oats = _____
5. Which grain is the best value to meet your needs? _____

LIVESTOCK FEEDING
UNIT VIIASSIGNMENT SHEET #3 — USE THUMB RULES TO DETERMINE
FEED FOR VARIOUS LIVESTOCK

NAME _____ SCORE _____

Determining proper feeding needs for various livestock is very important, especially for the inexperienced livestock feeder.

Refer to the rules of thumb in the information sheet to solve the following feeding problems. Give special attention to those situations that might apply to your own livestock feeding circumstances.

- A. Feeding bred gilt weighing approximately 250 pounds
1. Type of ration (protein level) = _____
 2. Daily feed amount (pounds) = _____
- B. Hand-feeding five pigs to be sold as market hogs; average weight, 180 pounds
1. Type of ration (protein level) = _____
 2. Daily feed amount (pounds) = _____
- C. Hand-feeding three pigs with an average weight of 85 pounds
1. Type of ration (protein level) = _____
 2. Daily feed amount (pounds) = _____
- D. Feeding 140-pound mature ewe, two and a half weeks prior to breeding
1. Daily amount of roughage (pounds) = _____
 2. Type of roughage = _____
 3. Daily amount of concentrate (pounds) = _____
 4. Type of concentrate (protein level) = _____
- E. Feeding 70-pound lamb
1. Type of feed (protein level) = _____
 2. Daily amount of feed (pounds) = _____
- F. Maintaining five ewes through the summer in a drylot; average weight, 135 pounds
1. Type of ration = _____
 2. Daily feed amount (pounds) = _____

ASSIGNMENT SHEET #3

G. Winter feeding ten bred heifers during heavy ice and snow coverage

1. Type of ration = _____
2. Daily amount of ration (pounds) = _____

H. Feeding two steers for slaughter; average weight of 900 pounds; kept in drylot

1. Daily amount of concentrate (pounds) = _____
2. Daily amount of roughage (pounds) = _____
3. If concentrate costs \$9.60 per 100 pounds, what would it cost to feed concentrate to the two steers for thirty days?

Cost = _____

I. Winter feeding a mature bull (beef) in drylot

1. Type of roughage = _____
2. Daily amount of roughage (pounds) = _____
3. Type of concentrate = _____
4. Daily amount of concentrate (pounds) = _____
5. Amount and type of protein supplement = _____

J. Feeding 1300-pound dairy cow producing 60 pounds of milk per day; kept in drylot

1. Daily amount of roughage (pounds) = _____
2. Type of concentrate (protein level) = _____
3. Daily amount of concentrate (pounds) = _____

K. Feeding dairy heifer weighing approximately 700 pounds; kept in drylot

1. Daily amount of roughage = _____
2. Type of roughage = _____
3. Daily amount of grain concentrate (pounds) = _____

ASSIGNMENT SHEET #3

L. Feeding 900-pound gelding ridden one hour per day for pleasure; kept in drylot

1. Maximum daily amount of roughage (pounds) = _____

2. Maximum daily amount of grain (pounds) = _____

M. Feeding 1200-pound idle mare nursing a foal

1. Daily amount of roughage (pounds) = _____

2. Daily amount of grain (pounds) = _____

LIVESTOCK FEEDING
UNIT VIIASSIGNMENT SHEET #4 — BALANCE RATIONS, USING THE
PEARSON SQUARE METHOD

NAME _____ SCORE _____

Often, you will need to balance a ration for a certain protein level by combining a grain and a protein supplement.

Balance the following rations, using the Pearson Square Method. Give the parts, percentage, and pounds of each for a ton (2000 pounds) mixture. Round off percentage answers. Refer to the information sheet if needed, and show your work.

A. Ration #1 16 percent ration using corn with 8.6 percent protein, and soybean meal with 41 percent protein; give pounds of each for a ton of ration.

B. Ration #2 14 percent ration using barley with 11 percent protein, and a prepared supplement with 36 percent protein; mix 1 ton of ration.

ASSIGNMENT SHEET #4

- C. Ration #3 16 percent ration using equal parts of corn (6.6 percent protein), and milo (8.8 percent protein); and equal parts of soybean meal (44 percent protein), and meat and bone scraps (55 percent protein); mix a ton of ration.

LIVESTOCK FEEDING
UNIT VII

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1 — Evaluated to the satisfaction of the instructor

Assignment Sheet #2

- A. 1. 760
- 2. 27.6¢
- B. 1. 220
- 2. 240
- 3. 54.5¢
- 4. 64.2¢
- 5. Barley

Assignment Sheet #3

- A. 1. 14 percent protein
- 2. 4 to 6 pounds
- B. 1. 13 percent protein
- 2. 36 pounds
- C. 1. 16 percent protein
- 2. 11.7 pounds
- D. 1. 3 pounds
- 2. Alfalfa/grass mixed hay
- 3. 1/2 to 3/4 pound
- 4. 12 percent protein
- E. 1. 16 to 18 percent protein
- 2. Free choice

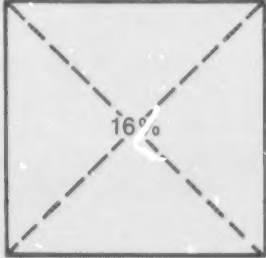
ANSWERS TO ASSIGNMENT SHEETS

- F. 1. Alfalfa/grass mixed hay
 2. 15 pounds
- G. 1. Alfalfa/grass mixed hay
 2. 200 pounds
- H. 1. 45 pounds concentrate
 2. 4 to 8 pounds roughage
 3. \$129.60
- I. 1. Alfalfa hay
 2. Free choice
 3. Ground or rolled grain
 4. 4 pounds
 5. 1 pound of 32 percent protein cubes
- J. 1. Free choice
 2. 14 to 16 percent protein
 3. 15 pounds
- K. 1. Free choice
 2. High-quality alfalfa hay
 3. 7 pounds
- L. 1. 13.5 pounds
 2. 6.75 pounds
- M. 1. 18 pounds
 2. 3.96 pounds, rounded to 4 pounds

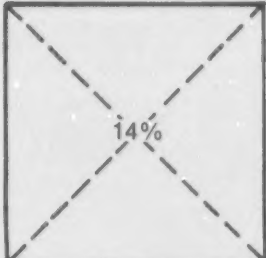
ANSWERS TO ASSIGNMENT SHEETS

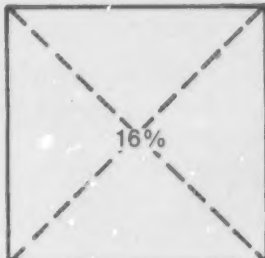
Assignment Sheet #4

A.

Corn 6.6%		Parts	Percentage	#/Ton
		25.0	73%	1460# Corn
SBM 41%		<u>9.4</u>	<u>27%</u>	<u>540# SBM</u>
		Total 34.4	100%	2000# Protein

B.

Barley 11%		Parts	Percentage	#/Ton
		22	88%	1760# Barley
Supplement 36%		<u>3</u>	<u>12%</u>	<u>240# Supplement</u>
		Total 25	100%	2000# Ration

C.	7.7%		Parts	Parts	Percentage	#/Ton	
Milo	8.8%		33.5	16.75	Milo	40%	800# Milo
Corn	6.6%			16.75	Corn	40%	800# Corn
SBM	44%			4.15	SBM	10%	200# SBM
M&BS	55%		8.3	4.15	M&BS	10%	200# M&BS
	49.5%						
			Total	41.8	41.80	100%	2000# Ration

LIVESTOCK FEEDING
UNIT VII

JOB SHEET #1 — OPEN A SEWN FEED SACK

- I. Tools and equipment
 - A. Sewn feed sack
 - B. Sharp pocket knife with pointed blade
- II. Procedure
 - A. Place feed sack on floor in front of you so that single stitching is on right side as you look down at top of sack
 - B. Insert knife point between farthest double stitch and left side of sack at end farther from you (Figure 13)

FIGURE 13



- C. Cut first thread that goes through sack
- D. Pull the cut single-stitched thread from right side of sack, while pulling remaining double-stitched thread from left side
- E. Continue pulling until stitching has been removed the full length of sack top
- F. Dispose of string properly in a trash container

(CAUTION: Strings left lying may trip people or be eaten by livestock.)

LIVESTOCK FEEDING
UNIT VII

TEST

NAME _____

SCORE _____

1. Match to their correct definitions terms associated with livestock feeding. Write the correct numbers in the blanks. Terms and definitions are continued on the next page.

- | | | |
|---------|---|------------------------|
| _____a. | Cud-chewing animal that has more than one compartment in its stomach | 1. Feed additive |
| _____b. | Tough part of feed that is not very digestible | 2. Ration |
| _____c. | General term for any component added to a ration for a specific purpose | 3. Commercial ration |
| _____d. | Various grain concentrates that are sometimes used in rations | 4. Fiber |
| _____e. | Feed allowed an animal for a twenty-four-hour period | 5. Creep feed |
| _____f. | Period of pregnancy | 6. Gestation |
| _____g. | Ration that supplies all necessary nutrients in proper amounts | 7. Monogastric |
| _____h. | Prepared feed, usually a balanced ration, that can be purchased for specific feeding purposes | 8. Ruminant |
| _____i. | Additional feed for young animals that supplements nutrients provided by mother's milk or other sources | 9. Nutrient |
| _____j. | High-protein additive that is sometimes used to increase a ration's protein level | 10. Balanced ration |
| _____k. | Of a desirable taste | 11. Protein supplement |
| _____l. | Class of food that aids in support of life; becomes a part of the body cells | 12. Cereal grains |
| _____m. | Pertaining to animals that have one stomach compartment | 13. Palatable |

TEST

- | | | |
|---------|---|--------------------------------------|
| _____n. | Any type of ration to which medicine or antibiotics have been added as a disease preventive | 14. Concentrate |
| _____o. | Feed low in TDN and high in fiber | 15. Medicated feed |
| _____p. | Feeding practice used just prior to breeding a female animal; improves animal's condition | 16. Total digestible nutrients (TDN) |
| _____q. | Percentage of all digestible matter, except minerals, in a feed | 17. Roughage |
| _____r. | Feed high in TDN and low in fiber | 18. Flushing |

2. Match nutrients to their correct basic functions. Write the correct numbers in the blanks.

- | | | |
|---------|---|------------------|
| _____a. | Produce body heat to help keep animal warm; provide energy for muscle movement; produce fat | 1. Water |
| _____b. | Help in tooth and bone formation; help prevent infection; aid body's chemical reactions; are necessary for many special body functions | 2. Protein |
| _____c. | Dissolves and carries other nutrients through body; regulates body temperature; initiates necessary chemical reactions in the body | 3. Carbohydrates |
| _____d. | Provide material for growth of bones, teeth, and tissue; regulate many of body's vital chemical processes; aid in muscular activities, reproduction, digestion, and tissue repair | 4. Fats |
| _____e. | Supplies material to build body tissues, hooves, horns, hair, and skin; is essential for fetal development in pregnant animals | 5. Minerals |
| _____f. | Provide energy and body heat; carry fat-soluble vitamins that are in feed | 6. Vitamins |

TEST

3. List quantities in which feeds may be purchased.

- a. _____
b. _____

4. Select from the following list factors to consider when purchasing feed. Write an "X" in the blank before each correct answer.

- ____ a. Quantity
____ b. Distance feed is stored from animal
____ c. Season of year
____ d. Condition and size of storage facilities
____ e. Protein level
____ f. Type of livestock being fed
____ g. Size of pen or pasture
____ h. Performance expected from livestock
____ i. Lease price
____ j. Price in relation to feeding value

5. List commercial feed tag requirements.

- a. _____
b. _____
c. _____

6. State rules for calculating price per pound of protein in feed.

- a. _____

b. _____

TEST

7. Match types of performance rations to their correct definitions. Write the correct numbers in the blanks.

- | | | |
|---------|---|------------------------|
| _____a. | Ration that supplies nutrients used by animal to produce fat after maintenance and growing requirements are met | 1. Work ration |
| _____b. | Ration that supplies nutrients above maintenance level; allows animal to build and expand body parts | 2. Maintenance ration |
| _____c. | Ration that supplies only those nutrients needed to maintain animal's normal body functions | 3. Growing ration |
| _____d. | Ration that supplies nutrients used by animal to produce items such as milk, eggs, or wool | 4. Reproduction ration |
| _____e. | Ration that supplies additional nutrients needed by working animals | 5. Production ration |
| _____f. | Ration that supplies additional nutrients needed by animal during breeding activities and pregnancy | 6. Fattening ration |

8. Match swine-feeding situations to their correct thumb rules. Write the correct numbers in the blanks. A blank may have more than one answer.

- | | | |
|---------|---|--|
| _____a. | 6 to 8 pounds of 14 percent protein ration | 1. Bred sows and gilts |
| _____b. | 4 to 6 pounds of 14 percent protein ration | 2. Sows nursing litters |
| _____c. | 6 to 8 pounds of 16 percent protein ration | 3. Nursing pigs from two weeks old to weaning |
| _____d. | 10 to 15 pounds of 14 to 15 percent protein ration | 4. Pigs from 50 pounds to 100 pounds |
| _____e. | 4 percent of body weight of 13 percent protein ration | 5. Pigs from 100 pounds to 170 pounds |
| _____f. | Free choice of 16 to 18 percent creep ration | 6. Pigs from 170 pounds to 220-pound market weight |
| _____g. | 5 percent of body weight of 14 percent protein ration | 7. Boars on maintenance |
| _____h. | 6 percent of body weight of 16 percent protein ration | 8. Boars during breeding season |
| | | 9. Sows and gilts, flushing two to three weeks prior to breeding |

TEST

9. Match sheep-feeding situations to their correct thumb rules. Write the correct numbers in the blanks.

- | | | |
|---------|---|--|
| _____a. | 3.5 pounds of alfalfa/grass mixed hay | 1. Ewes during first fifteen weeks of gestation |
| _____b. | 5 pounds of alfalfa/grass mixed hay | 2. Lambs from 75 pounds to 120-pound market weight |
| _____c. | Free choice of 16 to 18 percent protein ration | 3. Ewes on maintenance |
| _____d. | 4 pounds of alfalfa/grass mixed hay, plus $\frac{1}{2}$ pound of 12 percent protein ration | 4. Rams during breeding season |
| _____e. | 3 pounds of alfalfa/grass mixed hay | 5. Lambs from birth to eight weeks |
| _____f. | 5 pounds of alfalfa/grass mixed hay, plus 2 pounds of 12 percent protein ration | 6. Lambs from eight weeks to 75 pounds |
| _____g. | 3 to 4 pounds of 13 to 15 percent protein ration | 7. Rams on maintenance |
| _____h. | 3 pounds of alfalfa/grass mixed hay, plus $\frac{1}{2}$ to $\frac{3}{4}$ pound of 12 percent protein ration | 8. Ewes during last six weeks of gestation |
| _____i. | Free choice of 15 percent protein ration | 9. Ewes, flushing two to three weeks prior to breeding |
| _____j. | 4.5 pounds of alfalfa/grass mixed hay, plus 2 pounds of 12 percent protein ration | 10. Ewes during first eight weeks of lactation |

TEST

10. Match beef-feeding situations to their correct thumb rules. Write the correct numbers in the blanks.

- | | | |
|---------|--|---|
| _____a. | 2.5 percent of their body weight of 50 percent concentrate and 50 percent roughage | 1. Dry, pregnant cows and bred heifers during winter feeding when grazing is not possible |
| _____b. | 20 pounds of alfalfa/grass mixed hay | 2. Dry, pregnant cows and bred heifers during winter feeding when dry grass grazing is possible |
| _____c. | 2 pounds of 30 to 40 percent protein supplement | 3. Cows nursing calves during winter feeding when grazing is not possible |
| _____d. | First two days on feed, free choice of high-quality grass hay; third day to finish, add 2 pounds of concentrate ration; gradually increase concentrate and decrease high-quality grass hay until concentrate is leveled off at 2.5 percent of body weight, and grass hay is leveled off at 2 to 4 pounds | 4. Cows nursing calves during winter feeding when dry grass grazing is possible |
| _____e. | Free choice of alfalfa hay, plus 4 pounds of ground or rolled grain and 1 pound of 32 percent protein supplement in the form of cattle cubes | 5. Young bulls from weaning to fifteen months |
| _____f. | 30 pounds of alfalfa/grass mixed hay | 6. Mature bulls during winter feeding |
| _____g. | 3 pounds of 30 to 40 percent protein supplement | 7. Steers and heifers from weaning to finish |

TEST

11. Match dairy-cattle-feeding situations to their correct thumb rules. Write the correct numbers in the blanks.

- | | | |
|---------|---|---|
| _____a. | 1 pound of hay and $\frac{1}{2}$ pound of concentrate per 100 pounds of body weight | 1. Cows in production, on pasture |
| _____b. | Free choice of high-quality alfalfa hay, plus 1 percent of body weight in grain concentrate | 2. Mature bulls, and bull calves four months old and over |
| _____c. | Free choice of good-quality roughage, plus 1 pound of 14 to 16 percent protein concentrate for each 4 pounds of milk produced each day | 3. Heifers in drylot, four months old and older |
| _____d. | First five days, mother's milk; next three weeks, 1 pound whole milk for each 10 pounds of body weight; ten days old, begin dry calf starter ration; seven weeks old, discontinue milk and feed 5 pounds calf starter; seven weeks to four months, free choice of good-quality alfalfa hay, plus 2 to 4 pounds of concentrate mix | 4. Cows in production, not on pasture |
| _____e. | $\frac{1}{2}$ pound of grain concentrate per 100 pounds of body weight, not to exceed 4 to 6 pounds | 5. Calves from birth to four months |
| _____f. | 1 pound of 14 to 16 percent protein concentrate for each 3 pounds of milk produced over 30 pounds each day | 6. Dry cows |
| _____g. | Good pasture or free choice of high-quality alfalfa hay, plus 10 pounds of 10 percent protein in grain mixture | 7. Heifers on pasture, four months old and older |

TEST

12. Match light-horse-feeding situations to their correct thumb rules. Write the correct numbers in the blanks.

- | | | |
|---------|--|--|
| _____a. | 1.5 to 2 pounds of roughage per 100 pounds of body weight | 1. Idle mares nursing foals |
| _____b. | 1.25 to 1.5 pounds of roughage per 100 pounds of body weight, plus 0.5 to 0.75 pounds of grain per 100 pounds of body weight | 2. Idle mature horses |
| _____c. | 1.5 pounds of roughage per 100 pounds of body weight, plus 0.33 pounds of grain per 100 pounds of body weight | 3. Growing colts after weaning |
| _____d. | 1.5 to 2 pounds of roughage per 100 pounds of body weight, plus 1 to 1.5 pounds of grain per 100 pounds of body weight | 4. Pregnant mares |
| _____e. | 1 to 1.5 pounds of roughage per 100 pounds of body weight, plus 0.75 to 1.5 pounds of grain per 100 pounds of body weight | 5. Stallions during breeding season |
| _____f. | 1 to 1.5 pounds of roughage per 100 pounds of body weight, plus 0.5 to 1.5 pounds of grain per 100 pounds of body weight | 6. Foals before weaning |
| _____g. | 0.5 to 0.75 pounds of roughage per 100 pounds of body weight, plus 0.5 to 0.75 pounds of grain per 100 pounds of body weight | 7. Mature horses performing one to three hours of light work per day |

13. Balance a ration for protein content, using the Pearson Square Method. Show your work.

		Parts	Percentage	#/Ton
6.6% Corn		_____	_____	_____
38% Protein Supplement		=====	=====	=====
Total		_____	100%	2000#

TEST

- a. How many parts are corn?_____
- b. How many parts are protein supplement?_____
- c. How many total parts are there?_____
- d. What percentage of ration is corn?_____
- e. What percentage of ration is protein supplement?_____
- f. How many pounds of corn are there per ton?_____
- g. How many pounds of protein supplement are there per ton?_____

(NOTE: Test questions 14-17 list the assignment and job sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

- 14. Survey livestock-feeding information in the community.
- 15. Calculate the price per pound of protein in feed.
- 16. Use thumb rules to determine feed for various livestock.
- 17. Demonstrate the ability to open a sewn feed sack.

LIVESTOCK FEEDING
UNIT VII

ANSWERS TO TEST

- | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|
| 1. | a. | 8 | f. | 6 | k. | 13 | p. | 18 |
| | b. | 4 | g. | 10 | l. | 9 | q. | 16 |
| | c. | 1 | h. | 3 | m. | 7 | r. | 14 |
| | d. | 12 | i. | 5 | n. | 15 | | |
| | e. | 2 | j. | 11 | o. | 17 | | |
- 2.
- | | | | |
|----|---|----|---|
| a. | 3 | d. | 5 |
| b. | 6 | e. | 2 |
| c. | 1 | f. | 4 |
- 3.
- | | |
|----|-------------------------|
| a. | Bulk |
| b. | Fifty-pound paper sacks |
4. a, d, e, f, h, j
- 5.
- | | |
|----|----------------------------------|
| a. | Minimum crude protein percentage |
| b. | Minimum crude fat percentage |
| c. | Maximum crude fiber percentage |
- 6.
- | | |
|----|--|
| a. | Calculate actual pounds of protein by multiplying total pounds of feed by percent of total protein |
| b. | Find price per pound of protein by dividing total cost of feed by total pounds of protein |
- 7.
- | | | | |
|----|---|----|---|
| a. | 6 | d. | 5 |
| b. | 3 | e. | 1 |
| c. | 2 | f. | 4 |

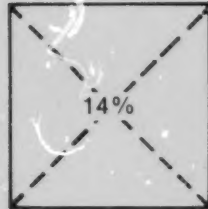
ANSWERS TO TEST

- | | | | | | | |
|-----|----|------|----|---|----|----|
| 8. | a. | 9 | e. | 6 | | |
| | b. | 1, 7 | f. | 3 | | |
| | c. | 8 | g. | 5 | | |
| | d. | 2 | h. | 4 | | |
| 9. | a. | 1 | e. | 3 | i. | 5 |
| | b. | 7 | f. | 4 | j. | 10 |
| | c. | 6 | g. | 2 | | |
| | d. | 8 | h. | 9 | | |
| 10. | a. | 5 | e. | 6 | | |
| | b. | 1 | f. | 3 | | |
| | c. | 2 | g. | 4 | | |
| | d. | 7 | | | | |
| 11. | a. | 2 | e. | 7 | | |
| | b. | 3 | f. | 1 | | |
| | c. | 4 | g. | 6 | | |
| | d. | 5 | | | | |
| 12. | a. | 2 | e. | 5 | | |
| | b. | 7 | f. | 4 | | |
| | c. | 1 | g. | 6 | | |
| | d. | 3 | | | | |

ANSWERS TO TEST

13.

6.6% Corn

38% Protein
Supplement

	Parts	Percentage	#/Ton
Corn	24.0	76%	1520#
Protein Supplement	7.4	24%	480#
Total	31.4	100%	2000#

- | | |
|---------|----------------|
| a. 24 | e. 24% |
| b. 7.4 | f. 1520 pounds |
| c. 31.4 | g. 480 pounds |
| d. 76% | |

14. Evaluated to the satisfaction of the instructor
15. Evaluated to the satisfaction of the instructor
16. Evaluated to the satisfaction of the instructor
17. Performance skills evaluated to the satisfaction of the instructor

INTRODUCTION TO PLANT SCIENCE UNIT I

UNIT OBJECTIVE

After completing this unit, the student should be able to identify common crops, plants, and trees that grow locally. The student will show this knowledge by completing the assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with plant science.
2. Match to their correct definitions terms associated with plant growth classifications.
3. List general factors that affect crop production.
4. Identify major grain crops grown in Oklahoma.
5. List major hay crops grown in Oklahoma.
6. Match plant classes to their specific crops.
7. Label the parts of a grass plant.
8. Identify common pasture and range plants.
9. Identify common weeds.
10. Label parts of a tree.
11. Identify common types of trees.

INTRODUCTION TO PLANT SCIENCE
UNIT I

SUGGESTED ACTIVITIES

- I. Unit contents
 - A. Objective sheet
 - B. Suggested activities
 - C. Supplement #1 — Plant Science Crossword Puzzle
 - D. Transparency masters
 - 1. TM #1 — Parts of a Grass Plant
 - 2. TM #2 — Parts of a Tree
 - E. Information sheet
 - F. Assignment sheets
 - 1. Assignment Sheet #1 — Identify Common Pasture and Range Plants
 - 2. Assignment Sheet #2 — Identify Common Weeds
 - 3. Assignment Sheet #3 — Label the Parts of a Grass Plant
 - 4. Assignment Sheet #4 — Label Parts of a Tree
 - 5. Assignment Sheet #5 — Identify Common Types of Trees
 - F. Answers to assignment sheets
 - G. Test
 - H. Answers to test
- II. Instructor's guide
 - A. Obtain materials to supplement unit.
 - 1. Heavy construction paper, tags, string, and tape for students to use when making their plant collections.
 - 2. Slides — *Range and Forage Plants*. Available from Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.

SUGGESTED ACTIVITIES

3. Film — *Farming with Nature*. Color, 35 minutes, Churchill Films, 1978. Available from Churchill Films, 622 North Robertson Boulevard, Los Angeles, California 90069.

(NOTE: This film is available to Oklahoma teachers on a free-loan basis. Oklahoma teachers may order from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center Film Library, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074. Out-of-state teachers must order from the address listed above.)

4. Books

- a. *Oklahoma Agricultural Statistics, 1982*. Available from Oklahoma Department of Agriculture, 122 State Capitol, Oklahoma City, Oklahoma 73105.
- b. *Pasture and Range Plants 1963*. Available from Phillips Petroleum Company, 4B1, Phillips Building, Bartlesville, Oklahoma 74003.

- B. Introduce unit by helping students focus on the importance of plants and how plants contribute to the agriculture industry.

SUGGESTIONS:

- Inform the students that agriculture is one of the top industries in the State of Oklahoma, contributing nearly 3 billion dollars annually to the state's economy. Explain to the students that the agriculture industry is divided into two major groups: livestock and crops. Oklahoma farmers farmed over 34.3 million acres in 1982.
- Several crops are referred to as *cash grain crops*. Ask students to identify what each of them thinks is the primary cash grain crop grown in Oklahoma and the primary cash grain crop grown in their community.

- C. Provide students with objective sheet.
- D. Discuss unit and specific objectives.
- E. Provide students with information and assignment sheets.

SUGGESTED ACTIVITIES

F. Discuss information and assignment sheets.

1. Discuss Information Sheet, Section I, explaining the importance of the terms used throughout the information and assignment sheets.

SUGGESTION:

- Have students complete Supplement #1, "Plant Science Cross-word Puzzle," to reinforce terms and definitions.

2. Use Information Sheet, Section II and Assignment Sheets #1 and #2 to help students relate to how plant classifications change in a range or pasture area.

SUGGESTION:

- Explain to students how overgrazing a range or pasture affects plant classifications.

3. Use Information Sheet, Section III to help students list factors that affect crop production.

SUGGESTIONS:

- Prior to teaching this unit, plant corn in three containers. A gallon bucket will be more than adequate. Attempt to have one stalk of corn growing in each container. One container should have all the correct factors for an ideal crop. Stress the plant in the second container by not providing any fertilizer. Use a heavy clay soil in the third container to illustrate the permeability of local soil. Refer to these examples each day as you continue to teach the unit.

- Show film, *Farming with Nature*, to help students learn about soil fertility.

4. Use Information Sheet, Section IV to help students identify major grain crops grown in Oklahoma.

SUGGESTION:

- Gather samples of major grain crops grown in Oklahoma and bring to the classroom. One pint of each of the crops is more than adequate. Place seeds of each crop in different pans and let the students examine them. You may want to number the pans and give the students a practical quiz.

SUGGESTED ACTIVITIES

5. Use Information Sheet, Section V to help students name the major hay crops grown in Oklahoma.

SUGGESTIONS:

- Ask students to name individuals in the school district who raise hay as their chief cash crop. If there is a hay producer in the school district, have that person come and talk to the class.
- Tell students that Oklahoma produces over 3 thousand tons of alfalfa hay yearly and over 1.7 thousand tons of other hay.
- Secure 1 bale of each of the different hay crops to help the students learn the differences in the types of hay crops.

6. Use Information Sheet, Section VI to help students classify plants.

SUGGESTIONS:

- Show students as many of the different classes as possible.
- Take students on a field trip so that they may examine the growing patterns of the different classes of plants.

7. Use Section VII of the Information Sheet, Transparency #1, and Assignment Sheet #3 to help students identify the parts of a grass plant.

SUGGESTIONS:

- Obtain a grass plant that is in a good growth stage, and point out the different parts to the class.
- Label selected parts of the specimen, and allow the students to take a practical test.

8. Combine Information Sheet, Sections VIII and IX and Assignment Sheets #1 and #2 to help students identify common pasture and range plants and common weeds.

SUGGESTIONS:

- Show *Range and Forage Plants* slides. Point out to the class identification points on each of the plants.
- Use *Pasture and Range Plants* to help students identify plants. Remind students that weeds will be found in the forbs section.
- Take a field trip to a range or pasture area to observe the plants in their growing stages. Collect samples and have the students identify the plants. It might be helpful to take *Pasture and Range Plants* on the field trip.

SUGGESTED ACTIVITIES

9. Combine Section X of the Information Sheet, Transparency #2, and Assignment Sheets #4 and #5 to help students identify trees and their parts.

SUGGESTIONS:

- Take a field trip to a forest area and collect different types of tree leaves. Help the students look for identification characteristics on the leaves.
- Demonstrate how to make a leaf collection. Show how to press the leaves flat, and stress the importance of taping or gluing the leaves on the paper correctly.

G. Give test.

III. Unit references

- A. Bledso, Gary. *Annual Report*. Oklahoma City, Oklahoma: Oklahoma State Board of Agriculture, 1972.
- B. Curtis, Ed. *Forestry*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1974.
- C. Hughes, Harold D., and Edwin R. Hensen. *Crop Production*. New York: The Macmillan Company, 1967.
- D. *Instructional Materials for Vocational Agriculture I*. College Station, Texas: Teaching Materials Center, Agriculture Education Department, Texas A & M University, n.d.
- E. *Interscholastic Identification List*. Stillwater, Oklahoma: Oklahoma State Department of Vocational Agriculture, 1973.
- F. Little, Elbert L., Jr. *Forest Trees of Oklahoma: How to Know Them*. Oklahoma City, Oklahoma: Oklahoma Forestry Division, State Department of Agriculture, 1981.
- G. *Pasture and Range Judging in Oklahoma*. Stillwater, Oklahoma: Cooperative Extension Service, Oklahoma State University, 1979.
- H. *Pasture and Range Plants*. Bartlesville, Oklahoma: Phillips Petroleum Company, 1963.
- I. *Some Identifying Characteristics of 52 Ohio Seeds*. Columbus, Ohio: Department of Agriculture Education, The Ohio State University, n.d.

SUGGESTED ACTIVITIES

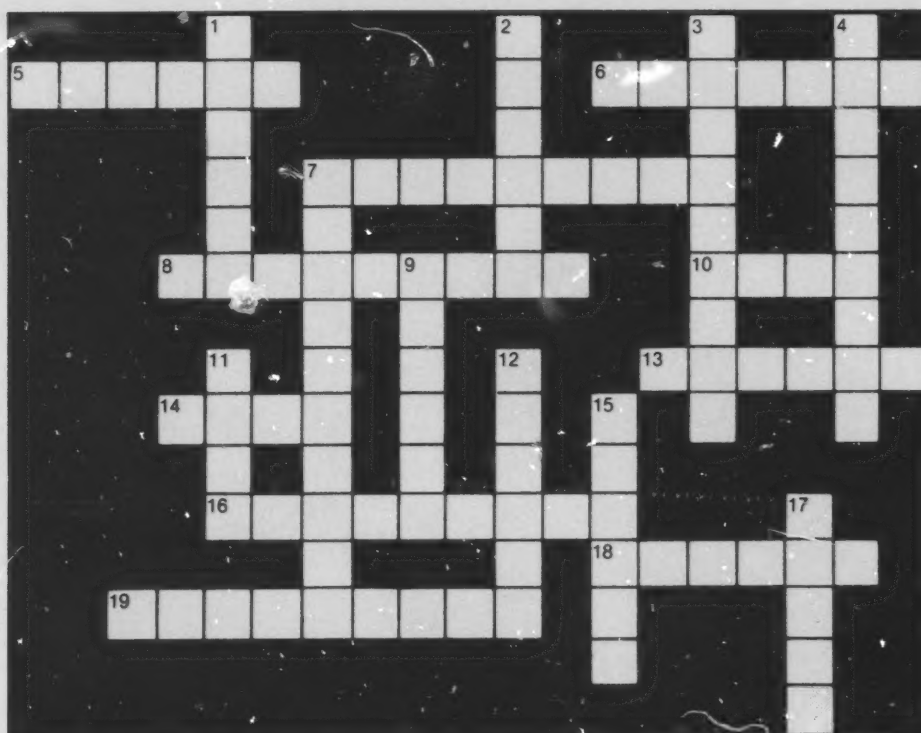
SUPPLEMENT #1 — PLANT SCIENCE CROSSWORD PUZZLE

ACROSS

5. Top-ranking native plants in the area
6. Plant that comes onto a range after both increasers and decreasers have been reduced
7. Plant that increases on a range when decreasers are reduced
8. Amount of nutrients in the soil to support plant growth
10. Essential plant-growth ingredient
13. Grass grown to be used for feed and seed
14. Undesirable plant growing with a crop
16. Plant that decreases on a range when exposed to heavy grazing
18. Plant that completes its life cycle in one year
19. Plant that loses its leaves at the end of a growing season

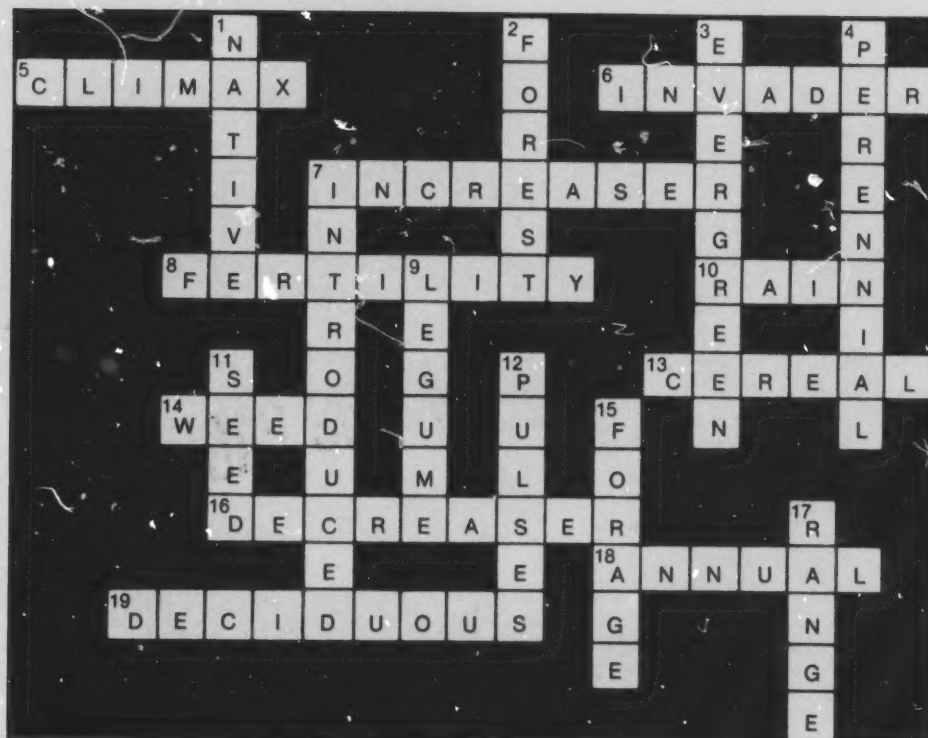
DOWN

1. Plant originating in North America
2. Thick growth of trees
3. Plant that maintains its leaves throughout the year
4. Plant that lives more than one year but, in some cases, produces seed the first year
7. Plants brought into the United States from other countries
9. Soil-improving plant that manufactures nitrogen
11. Plant part that develops into new plant if sown
12. Leguminous plant or its seeds (pl.)
15. Livestock feeds such as pasture, hay, or silage
17. Extensive area of natural pasture land

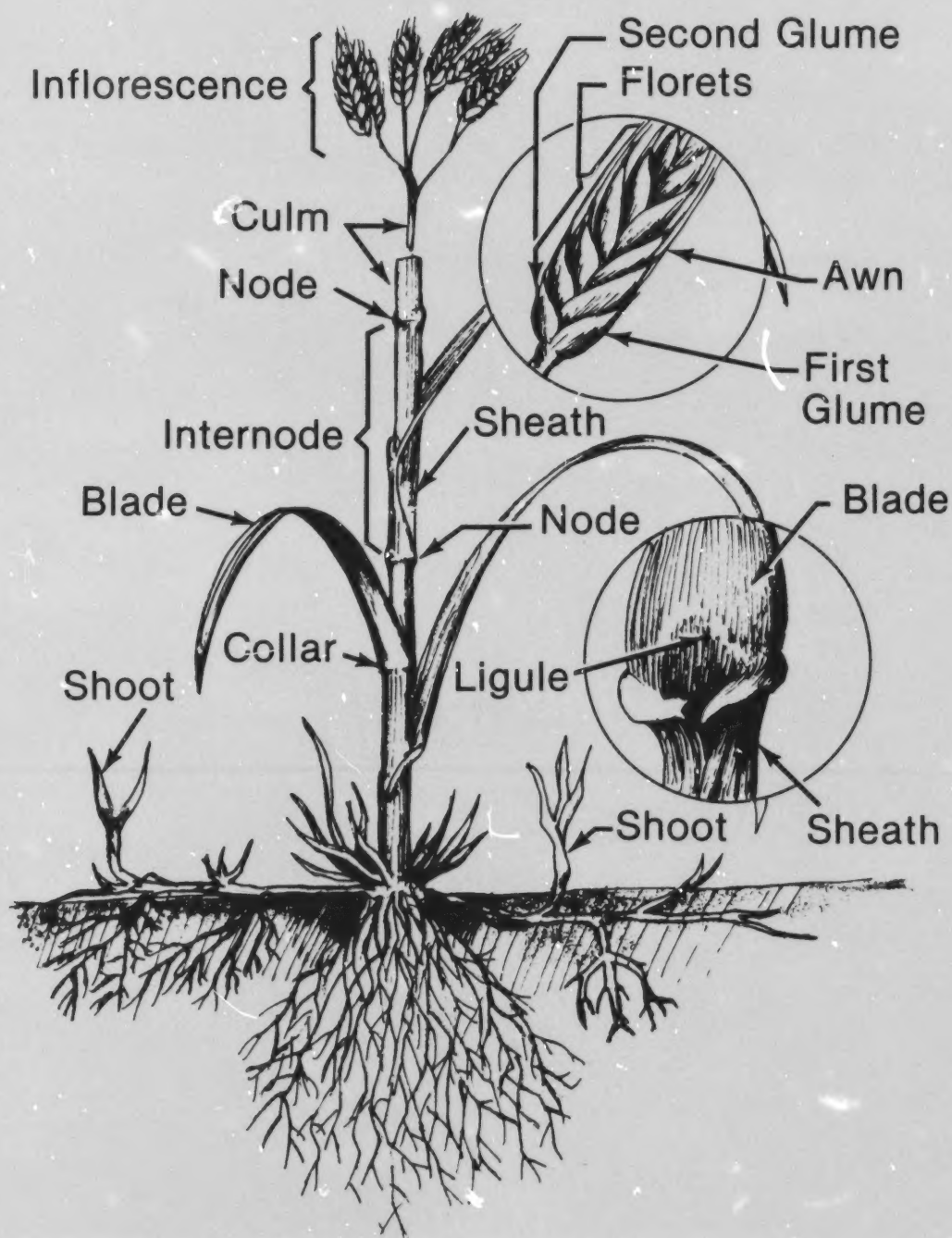


SUGGESTED ACTIVITIES

SUPPLEMENT #1



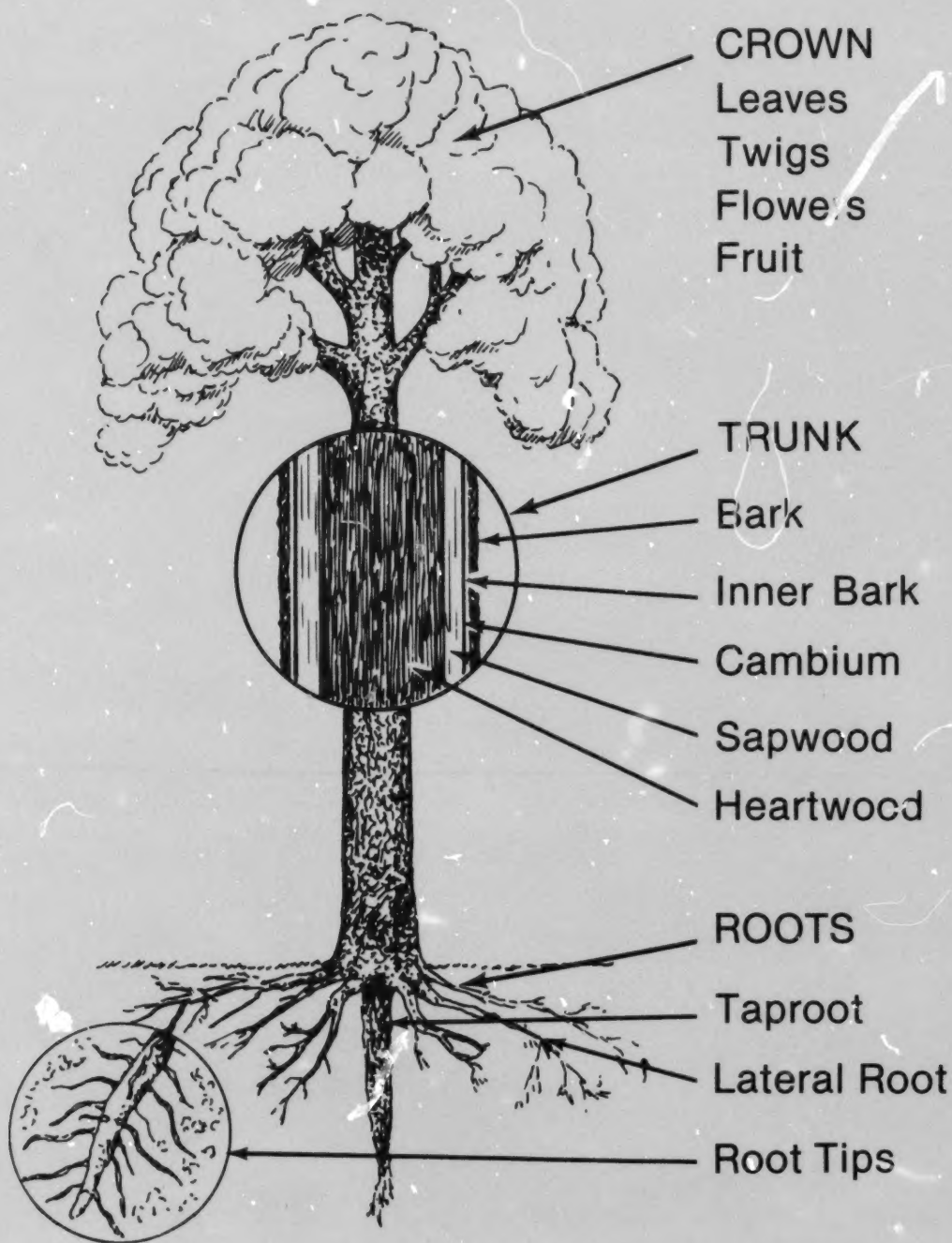
Parts of a Grass Plant



1066

TM #1

Parts of a Tree



INTRODUCTION TO PLANT SCIENCE
UNIT I

INFORMATION SHEET

I. Terms and definitions

- A. Annual — Plant that completes its life cycle in one year
- B. Perennial — Plant that lives more than one year but, in some cases, produces seeds the first year
- C. Cereal — Grass grown to be used for feed or seed
- D. Soil fertility — Amount of nutrients in the soil to support plant growth
- E. Forage — Livestock feeds, such as pasture, hay, or silage
- F. Legume — Soil-improving plant that manufactures nitrogen

EXAMPLES: Soybeans, alfalfa

- G. Range — Extensive area of natural pastureland
- H. Weed — Undesirable plant growing with a crop
- I. Native — Plant originating in North America
- J. Introduced — Plants brought into the United States from other countries
- K. Climax — Top-ranking native plants in the area
- L. Pulse — Leguminous plant or its seeds
- M. Forest — Thick growth of trees
- N. Deciduous — Plant that loses its leaves at the end of a growing season
- O. Evergreen — Plant that maintains its leaves throughout the year

II. Terms associated with plant growth classifications

- A. Cool-season plant — Plant that grows during the fall, winter, or spring
- B. Warm-season plant — Plant that grows during the summer and early fall
- C. Decreaser — Plant that decreases on a range when exposed to heavy grazing
- D. Increaser — Plant that increases on a range when decreasers are reduced
- E. Invader — Plant that comes onto a range after both increasers and decreasers have been reduced

INFORMATION SHEET

III. General factors that affect crop production

- A. Soil fertility
- B. Climatic conditions
- C. Economic factors

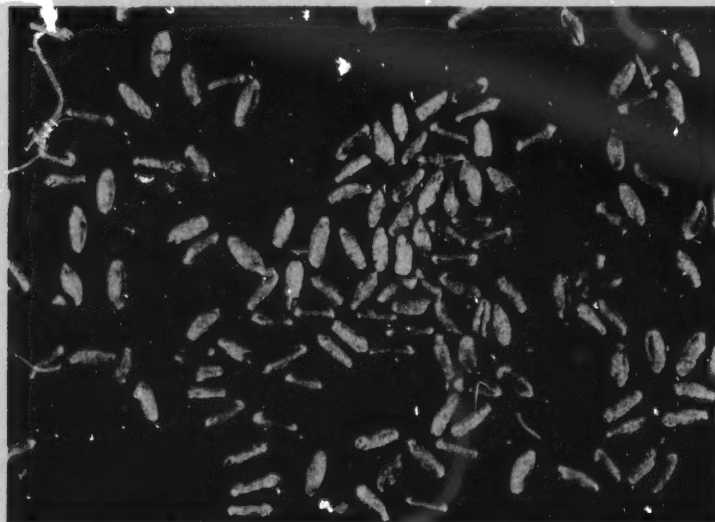
(NOTE: The political situation also affects crop production.)

- D. Type of land

IV. Major grain crops grown in Oklahoma (Figures 1-6)

- A. Wheat

FIGURE 1



INFORMATION SHEET

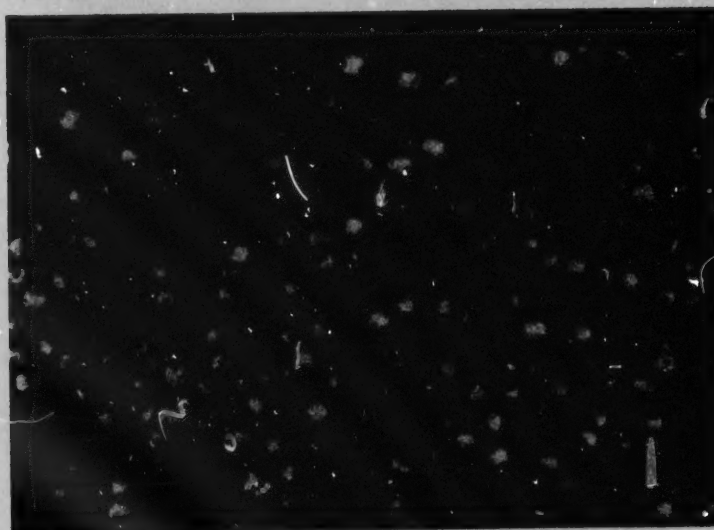
B. Barley

FIGURE 2



C. Grain sorghum

FIGURE 3



INFORMATION SHEET

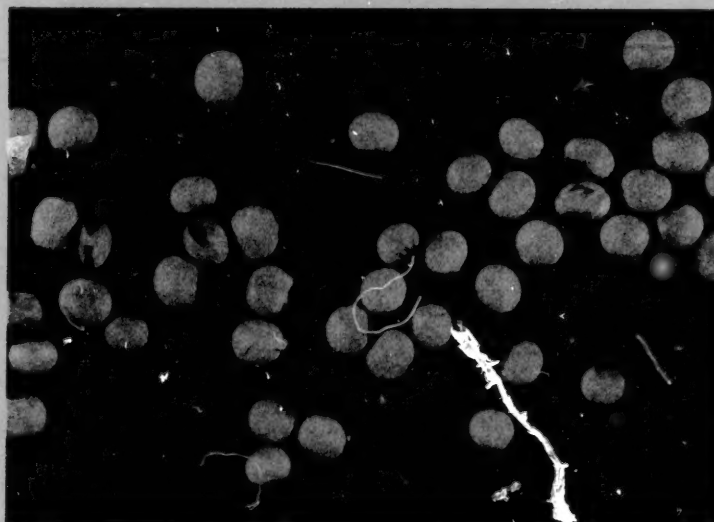
D. Oats

FIGURE 4



E. Soybeans

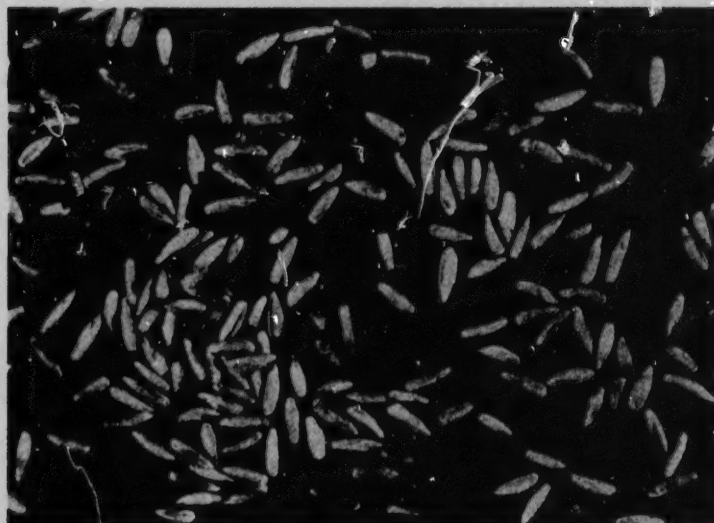
FIGURE 5



INFORMATION SHEET

F. Rye

FIGURE 6



V. Major hay crops grown in Oklahoma

(NOTE: Hay crops of all kinds contribute over 179 million dollars to the Oklahoma economy.)

- A. Alfalfa
- B. Native grasses
- C. Sudan
- D. Millet

VI. Plant classes and specific crops

- A. Cereal
 - 1. Wheat
 - 2. Corn
 - 3. Oats

INFORMATION SHEET

B. Root

1. Potatoes
2. Sweet potatoes
3. Turnips

C. Tree

1. Pecans
2. Apples
3. Peaches
4. Pears

D. Oil seed

(NOTE: These crops may be used for their seeds or oil.)

1. Soybeans
2. Peanuts
3. Cottonseeds

E. Pulse

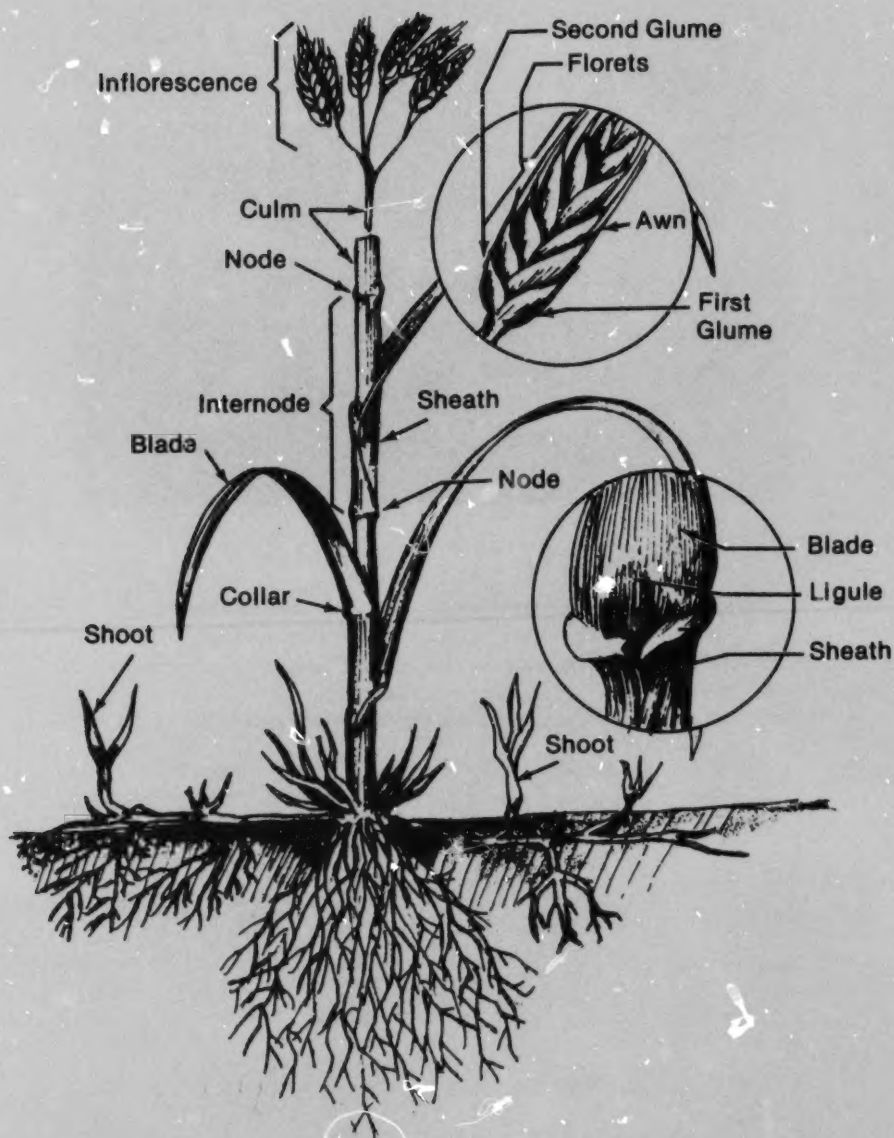
(NOTE: Pulse includes chiefly those legumes with large seeds used for food.)

1. Beans
2. Peas

INFORMATION SHEET

VII. Parts of a grass plant (Figure 7)

FIGURE 7



INFORMATION SHEET

VIII. Common pasture and range plants (Figures 8-19)

A. Big bluestem

FIGURE 8



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Perennial, warm season, native, decreaser, good grazer

Plant: Tall grass, short roots, stemmy hair at base

Seed: Long, very small; head branches into three parts resembling a turkey's foot

INFORMATION SHEET

B. Little bluestem

FIGURE 9



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Perennial, warm season, native, decreaser, good grazer

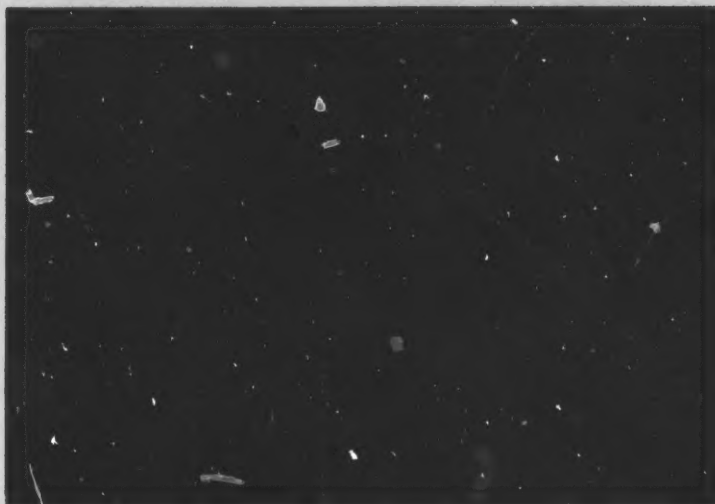
Plant: Deep roots, bluish stem; leaves tend to fold

Seed: White, very small, soft

INFORMATION SHEET

C. Indian grass

FIGURE 10



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Perennial, warm season, native, decreaser, good grazer

Plant: Tall grass; ligule at base of leaf attached to stem

Seed: Golden; produced in heads like sorghum

INFORMATION SHEET

D. Switchgrass

FIGURE 11



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Perennial, warm season, native, decreaser, good grazer

Plant: Tall grass with large seed head; white hair present at base of leaf

Seed: Large, sprangled head

INFORMATION SHEET

E. Johnson grass

FIGURE 12



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Perennial, warm season, introduced

Plant: Tall grass with wide leaves having thick, light-colored midvein

Seed: Glossy black to ivory-colored

INFORMATION SHEET

F. Sideoats grama

FIGURE 13



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Perennial, warm season, native, increaser

Plant: Oatlike seeds produced on side of plant

Seed: Small; produced in large quantities

INFORMATION SHEET

G. Hairy grama

FIGURE 14



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Perennial, warm season, native, increaser

Plant: Short grass with comblike seed head

Seed: Covered with hair and having curved, needlelike points

INFORMATION SHEET

H. Blue grama

FIGURE 15



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Perennial, warm season, native, increaser

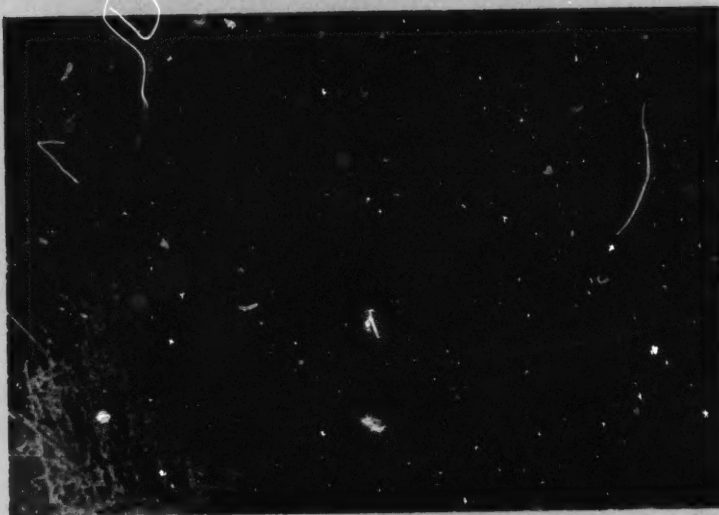
Plant: Bunch grass, 10 to 20 inches high, reproduced by seed

Seed: Curved; resembles eyebrow

INFORMATION SHEET

I. Buffalo grass

FIGURE 18



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Perennial, warm season, native, increaser

Plant: Short grass with leaves close to ground

Seed: Produced in burs, each containing one to four seeds

INFORMATION SHEET

J. Wild rye

FIGURE 17



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Perennial, cool season, native, increaser

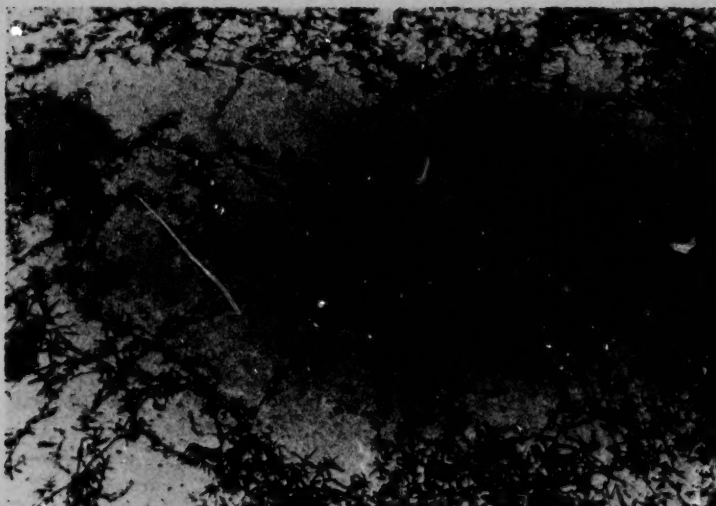
Plant: Tall grass with spearlike blades

Seed: Long awn; seeds curve downward after maturing

INFORMATION SHEET

K. Bermuda grass

FIGURE 18



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Perennial, warm season, introduced, good grazer

Plant: Sod-forming; spreads by runners

Seed: Produced in slender spikeflowering heads

INFORMATION SHEET

L. Weeping lovegrass

FIGURE 19



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Perennial, warm season, introduced

Plant: Tall bunch grass, blue flower, tapered leaf

Seed: Loose head, dull-straw-colored to gray, 8 to 12 inches long, shaped like wheat kernel

INFORMATION SHEET

IX. Types of common weeds (Figures 20-28)

A. Annual ragweed

FIGURE 20



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Native, warm season, perennial

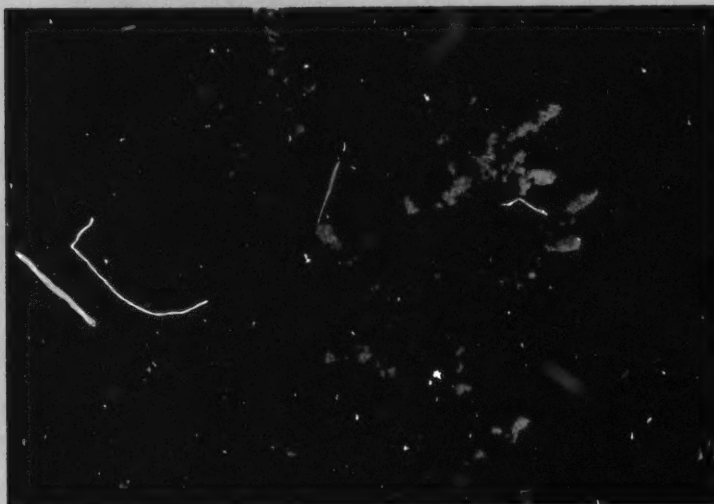
Plant: Erect stem that branches into a bushy growth covered with dense, minute hairs and tassel-like greenish flowers

Seed: Dark colored, about 1/8 inch long; woody hull with a pointed tip surrounded by short spines

INFORMATION SHEET

B. Heath aster

FIGURE 21



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Native, warm season, perennial

Plant: Large, bushlike clumps with small, stiff leaves and white flowers

INFORMATION SHEET

C. Ironweed

FIGURE 22



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Native, warm season, perennial

Plant: Stiff, erect woody stem covered with short dense hair; upper portion of stem branched; 2 to 5 feet tall

Seed: Reddish purple, uniform in shape, oblong, prominently ribbed with short bristles

INFORMATION SHEET

D. Common broomweed

FIGURE 23



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Native, warm season, annual

Plant: Tough woody stem that branches near the top

INFORMATION SHEET

E. Black-eyed Susan

FIGURE 24



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Native, warm season, perennial

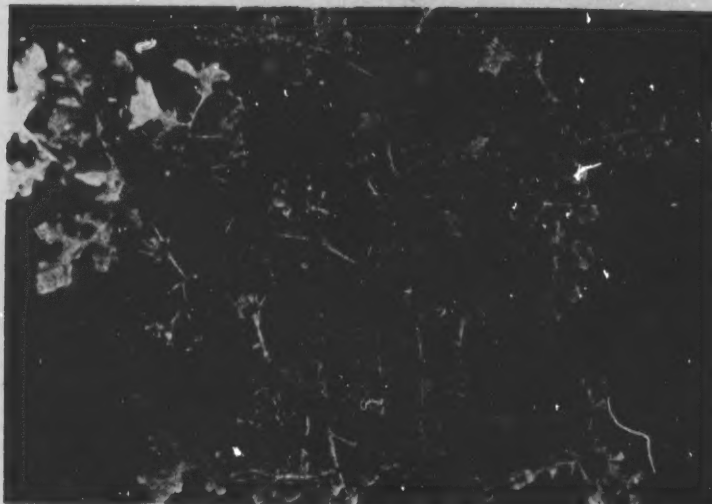
Plant: Individual or clump stems; bristly hairs, few branches

1091

INFORMATION SHEET

F. Buffalobur

FIGURE 25



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Native, warm season, annual

Plant: Erect stems; 6 to 24 inches tall; hairy and densely covered with stiff, long, yellow prickles or spines

Seed: Brownish-black, round, flattened; borne in a small berry-covered bur

INFORMATION SHEET

G. Cocklebur

FIGURE 28



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Introduced, warm season, annual

Plant: Stout stems, spreading branches, alternate leaves; rough to the touch

Seed: Small, hard, oval bur about $\frac{3}{4}$ inch long; strong, hooked spike

INFORMATION SHEET

H. Common yarrow

FIGURE 27



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Native, warm season, perennial

Plant: Tall, erect stems covered with long silky hairs

Seed: Flattened oblong about 1/8 inch long; white to gray in color

INFORMATION SHEET

I. Broadleaf milkweed

FIGURE 28



Courtesy: Cooperative Extension Service, Oklahoma State University.

Characteristics: Native, warm season, perennial

Plant: Stout, nonbranching stems; opposite leaves are large and thick

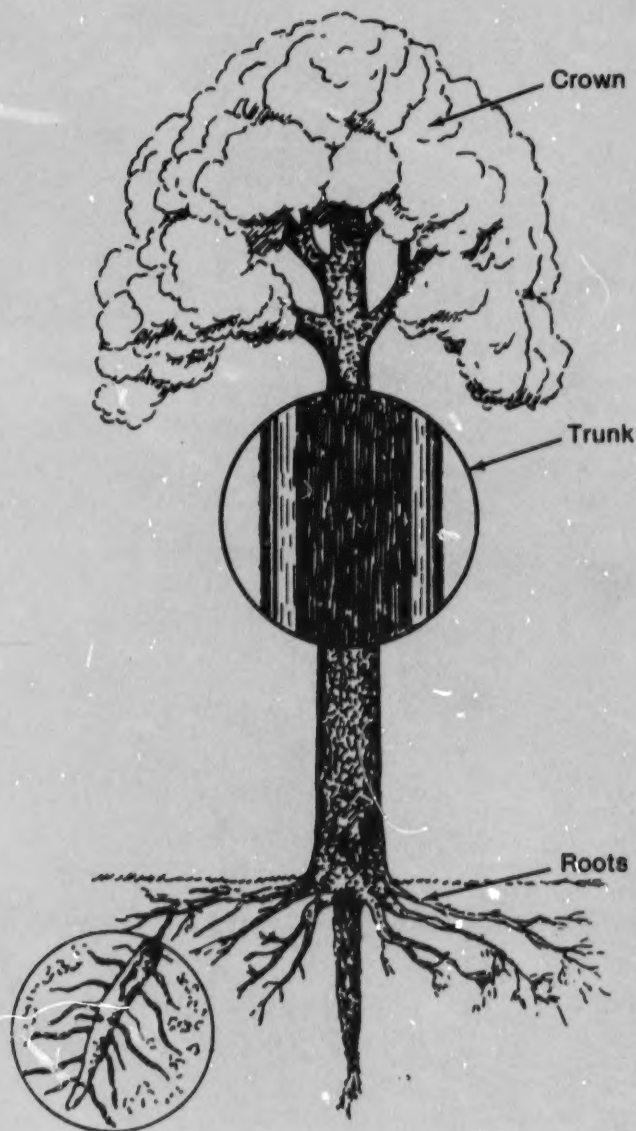
Seed: Plumed, flattened, round seeds contained in pointed pods 1 to 3 inches long

INFORMATION SHEET

X. Parts of a tree (Figure 29)

(NOTE: Leaves, twigs, flowers, and fruit are all part of the crown. Under the bark are several layers of wood: inner bark, cambium, sapwood, and heartwood. All trees have two types of roots: tap and lateral.)

FIGURE 29



INFORMATION SHEET

XI. Common types of trees (Figures 30-40)

(NOTE: Most trees are identified by examining leaf and seed configurations.)

A. Pin oak

FIGURE 30



B. Bur oak

FIGURE 31



Figures 30 and 31 used with permission of the Oklahoma Forestry Division, State Department of Agriculture.

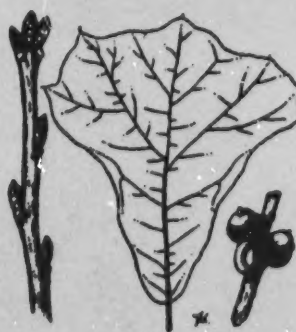
C. White oak

FIGURE 32



D. Blackjack oak

FIGURE 33



Figures 32 and 33 used with permission of the Oklahoma Forestry Division, State Department of Agriculture.

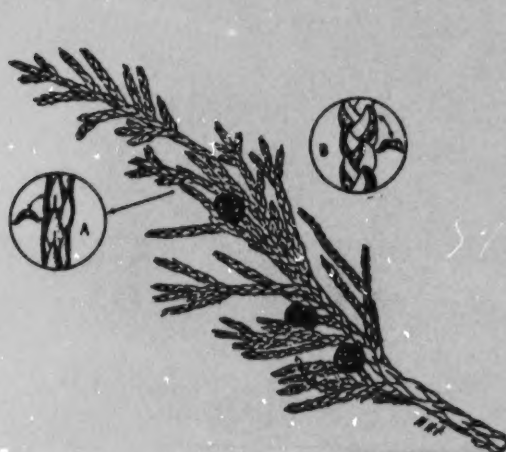
INFORMATION SHEET

E. Eastern red cedar

F. Pecan

FIGURE 34

FIGURE 35



Figures 34 and 35 used with permission of the Oklahoma Forestry Division, State Department of Agriculture.

G. Black walnut

H. Black hickory

FIGURE 36

FIGURE 37



Figures 36 and 37 used with permission of the Oklahoma Forestry Division, State Department of Agriculture.

INFORMATION SHEET

I. Scotch pine

FIGURE 38



J. American elm

FIGURE 39



Figures 38 and 39 used with permission of the Oklahoma Forestry Division, State Department of Agriculture.

K. Plains cottonwood

FIGURE 40



Figure 40 used with permission of the Oklahoma Forestry Division, State Department of Agriculture.

INTRODUCTION TO PLANT SCIENCE UNIT I

ASSIGNMENT SHEET #1 — IDENTIFY COMMON PASTURE AND RANGE PLANTS

NAME _____

SCORE _____

Pasture and range plants are very important to farmers and ranchers. For approximately seven months of the year these plants provide feed for livestock. As a production agriculturist, you must know what types of plants are available on your farm or ranch to provide properly managed pastures.

Collect ten pasture or range plants found on your farm or in your community. Assign each plant a number that corresponds to the numbers on the chart below. Identify the plant as a cool- or warm-season plant; an increaser, decreaser, or invader; and as either a perennial or annual.

Plant No.	Common Name	Season		Increaser	Invader	Decreaser	Perennial	Annual
		Cool	Warm					
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								

INTRODUCTION TO PLANT SCIENCE UNIT I

ASSIGNMENT SHEET #2 — IDENTIFY COMMON WEEDS

NAME _____

SCORE _____

Weeds compete against other plants for nutrients and can even destroy a range or pasture. Production agriculturists must be able to identify common weeds in the community in order to select the appropriate type of chemical to use in controlling their growth and spread.

Collect ten weeds found on your farm or within your community. Assign each weed a number that corresponds to the numbers on the chart below. Write the common name of the weed, and identify each weed as a warm- or cool-season plant; a decreaser, increaser, or invader; and as either a perennial or annual.

Weed No.	Common Name	Season		Decreater	Invader	Increaser	Perennial	Annual
		Cool	Warm					
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								

INTRODUCTION TO PLANT SCIENCE UNIT I

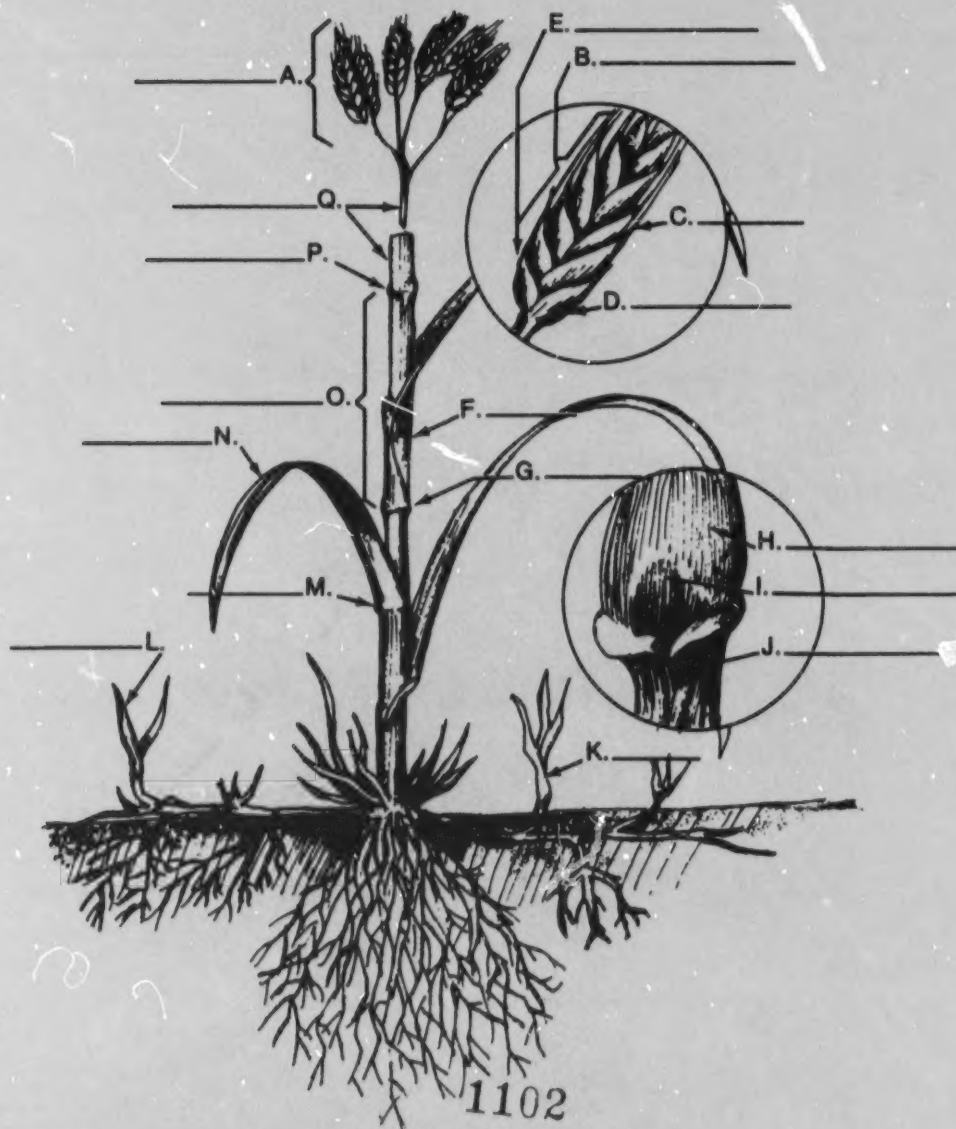
ASSIGNMENT SHEET #3 — LABEL THE PARTS OF A GRASS PLANT

NAME _____

SCORE _____

All grass plants have the same basic parts. Knowing the parts of the plant will help you identify the plant.

Label the parts of the grass plant illustrated below.



INTRODUCTION TO PLANT SCIENCE
UNIT I

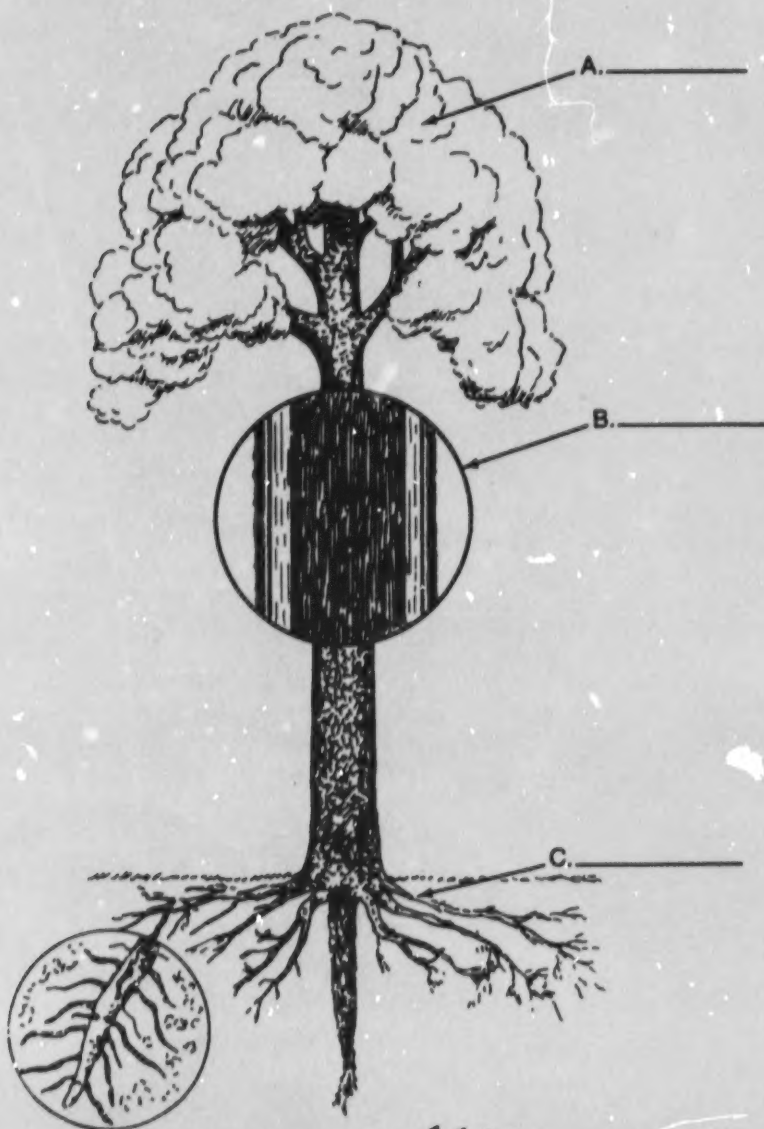
ASSIGNMENT SHEET #4 — LABEL PARTS OF A TREE

NAME _____

SCORE _____

As a production agriculturist you may be required to remove trees from your property or to spray trees for insects or disease. It is helpful to be able to identify the tree parts before applying insecticides and pesticides.

Label the parts of the tree illustrated below.



INTRODUCTION TO PLANT SCIENCE
UNIT I

ASSIGNMENT SHEET #5 — IDENTIFY COMMON TYPES OF TREES

NAME _____

SCORE _____

The best way to identify trees is by examining the leaves.

Collect ten leaves from trees growing on your farm or in your community. Place each leaf on a sheet of construction paper and tape the leaf to secure it. Number the sheets of paper one through ten. Place the leaves inside a magazine and place a heavy object on the magazine to press the leaves flat. Name the tree that the leaf came from, and identify the tree as either deciduous or evergreen.

Leaf No.	Common Name of Tree	Deciduous	Evergreen
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

INTRODUCTION TO PLANT SCIENCE
UNIT I

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1 — Evaluated to the satisfaction of the instructor

(NOTE: Use the following criteria as an aid in evaluating the completed assignment sheet.)

- A. Did the student collect ten different pasture and range plants?
- B. Did the student label the collection to agree with the chart in the assignment sheet?
- C. Did the student classify the plants correctly?

Assignment Sheet #2 — Evaluated to the satisfaction of the instructor

(NOTE: Use the following criteria as an aid in evaluating the completed assignment sheet.)

- A. Did the student collect ten different weeds?
- B. Did the student label the collection to agree with the chart in the assignment sheet?
- C. Did the student classify the collection correctly?

Assignment Sheet #3

- | | |
|------------------|--------------|
| A. Inflorescence | J. Sheath |
| B. Florets | K. Shoot |
| C. Awn | L. Shoot |
| D. First glume | M. Collar |
| E. Second glume | N. Blade |
| F. Sheath | O. Internode |
| G. Node | P. Node |
| H. Blade | Q. Culm |
| I. Ligule | |

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #4

- A. Crown
- B. Trunk
- C. Roots

Assignment Sheet #5 — Evaluated to the satisfaction of the instructor

(NOTE: Use the following criteria as an aid in evaluating the completed assignment sheet.)

- A. Did the student collect ten different types of tree leaves?
- B. Did the student attach the leaves to a piece of construction paper as instructed?
- C. Did the student label the collection to agree with the chart in the assignment sheet?
- D. Did the student classify the collection correctly?

INTRODUCTION TO PLANT SCIENCE
UNIT I

TEST

NAME _____

SCORE _____

1. Match to their correct definitions terms associated with plant science. Write the correct numbers in the blanks.

- | | | |
|---------|---|--------------------|
| _____a. | Leguminous plant or its seeds | 1. Legume |
| _____b. | Plant that completes its life cycle in one year | 2. Range |
| _____c. | Soil-improving plant that manufactures nitrogen | 3. Deciduous |
| _____d. | Plant originating in North America | 4. Native |
| _____e. | Top-ranking native plants in the area | 5. Climax |
| _____f. | Undesirable plant growing with a crop | 6. Forest |
| _____g. | Extensive area of natural pastureland | 7. Annual |
| _____h. | Livestock feeds, such as pasture, hay, or silage | 8. Cereal |
| _____i. | Grass grown to be used for feed or seed | 9. Forage |
| _____j. | Plant that lives more than one year but, in some cases, produces seeds the first year | 10. Evergreen |
| _____k. | Plants brought into the United States from other countries | 11. Soil fertility |
| _____l. | Amount of nutrients in the soil to support plant growth | 12. Introduced |
| _____m. | Thick growth of trees | 13. Perennial |
| _____n. | Plant that loses its leaves at the end of a growing season | 14. Weed |
| _____o. | Plant that maintains its leaves throughout the year | 15. Pulse |

TEST

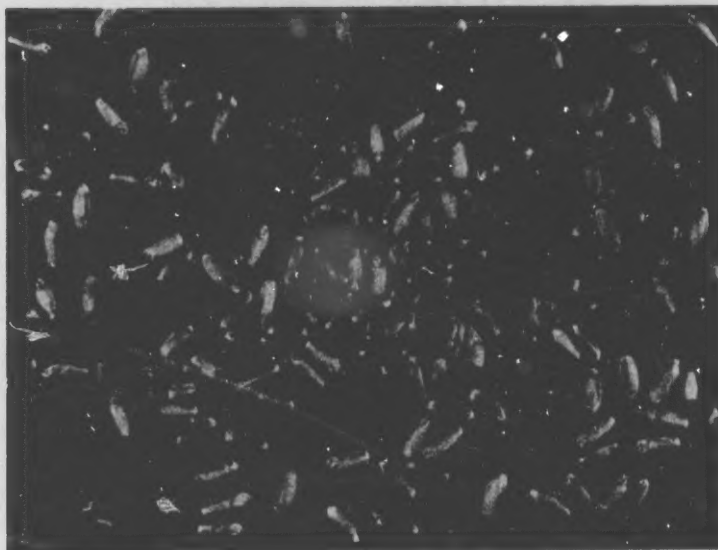
2. Match to their correct definitions terms associated with plant growth classifications. Write the correct numbers in the blanks.

- | | | |
|---------|--|----------------------|
| _____a. | Plant that comes onto a range after both increasers and decreasers have been reduced | 1. Decreaser |
| _____b. | Plant that grows during the summer and early fall | 2. Cool-season plant |
| _____c. | Plant that decreases on a range when exposed to heavy grazing | 3. Invader |
| _____d. | Plant that increases on a range when decreasers are reduced | 4. Warm-season plant |
| _____e. | Plant that grows during the fall, winter, or spring | 5. Increaser |

3. List general factors that affect crop production.

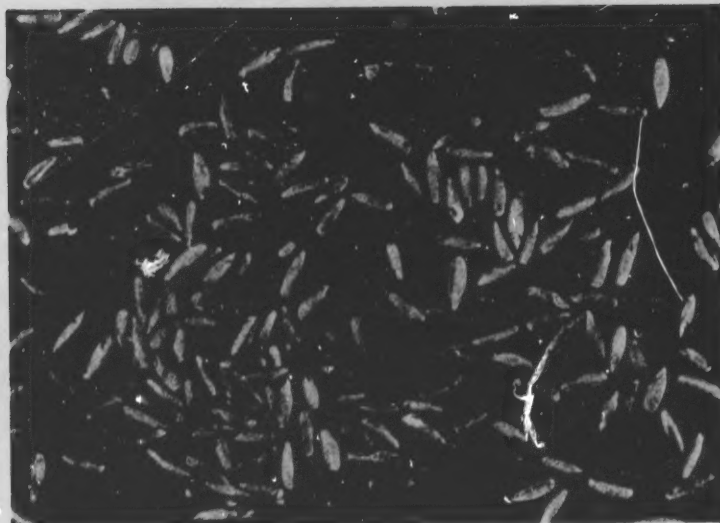
- a. _____
- b. _____
- c. _____
- d. _____

4. Identify major grain crops grown in Oklahoma. Write the correct names in the blanks.



- a. _____

TEST

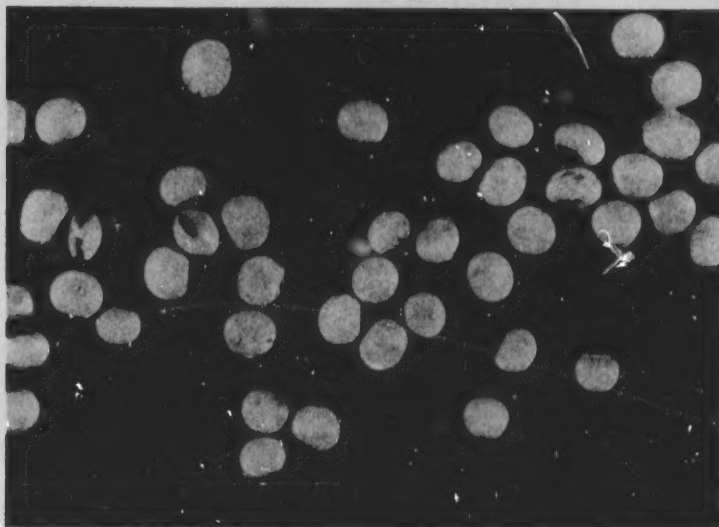


b. _____

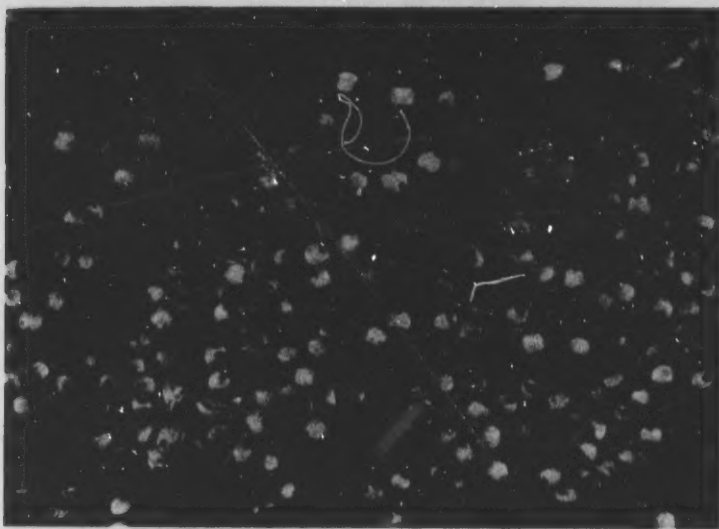


c. _____

TEST



d. _____



e. _____

TEST



f. _____

5. List major hay crops grown in Oklahoma.

a. _____

b. _____

c. _____

d. _____

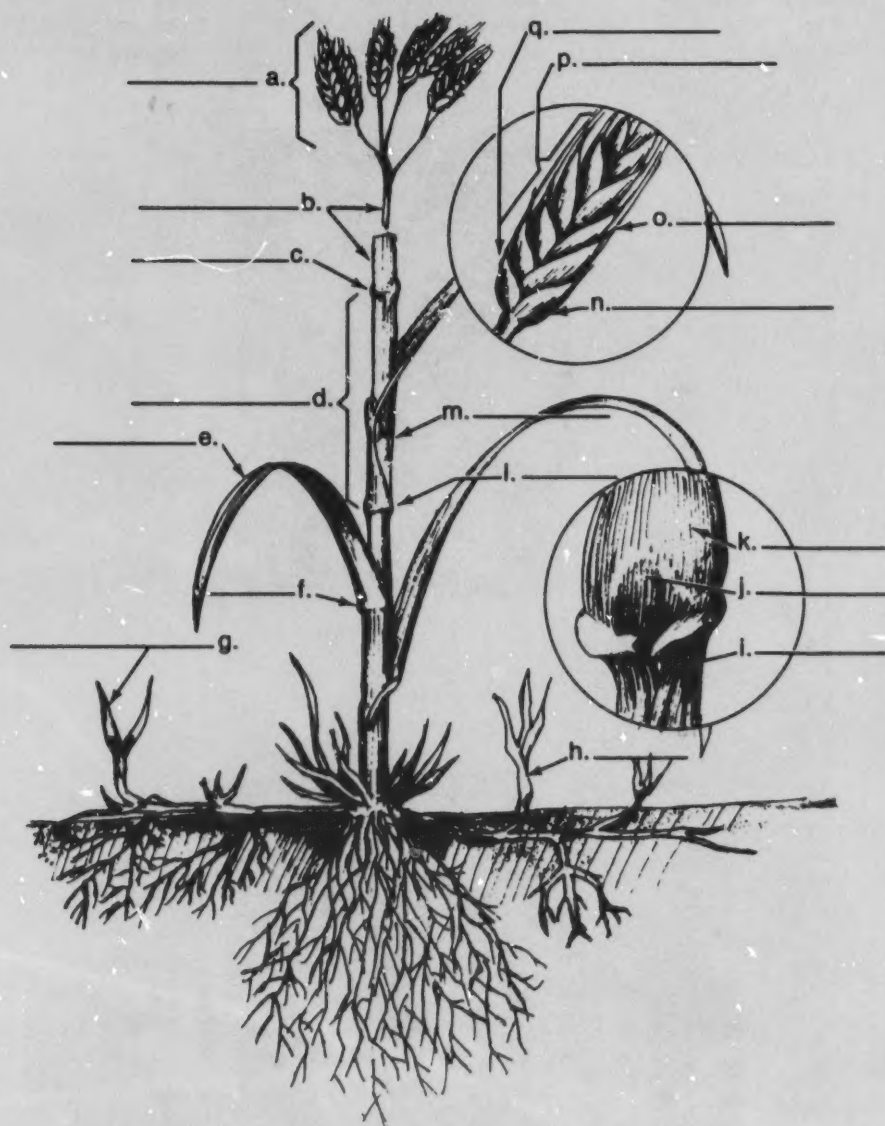
TEST

6. Match plant classes to their specific crops. Write the correct numbers in the blanks. Numbers may be used more than once.

- | | |
|------------------------|-------------|
| _____a. Potatoes | 1. Cereal |
| _____b. Corn | 2. Root |
| _____c. Wheat | 3. Oil seed |
| _____d. Pecans | 4. Pulse |
| _____e. Beans | 5. Tree |
| _____f. Soybeans | |
| _____g. Oats | |
| _____h. Peanuts | |
| _____i. Cottonseeds | |
| _____j. Peas | |
| _____k. Apples | |
| _____l. Peaches | |
| _____m. Turnips | |
| _____n. Pears | |
| _____o. Sweet potatoes | |

TEST

7. Label the parts of the grass plant illustrated below.



TEST

8. Identify the following common pasture and range plants. Write the correct names in the blanks.

Big bluestem
Little bluestem
Indian grass
Switchgrass

Johnson grass
Sideoats grama
Hairy grama
Blue grama

Buffalo grass
Wild rye
Bermuda grass
Weeping lovegrass



a. _____

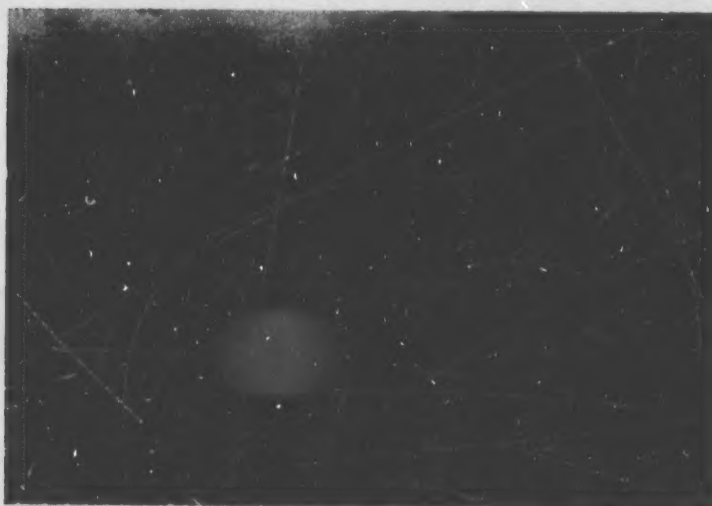


b. _____

TEST



c. _____

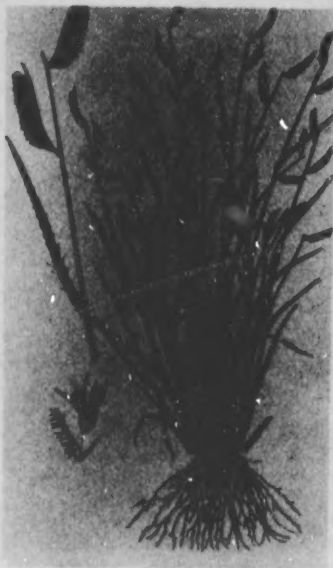


d. _____

TEST



e.



f.

TEST



g.

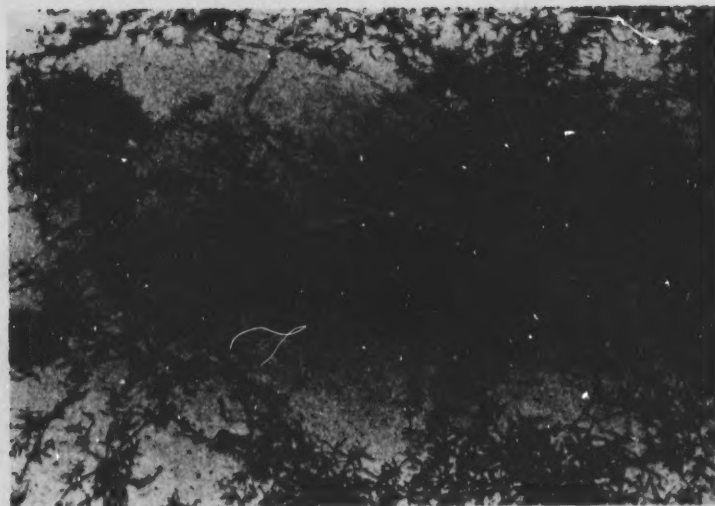


h.

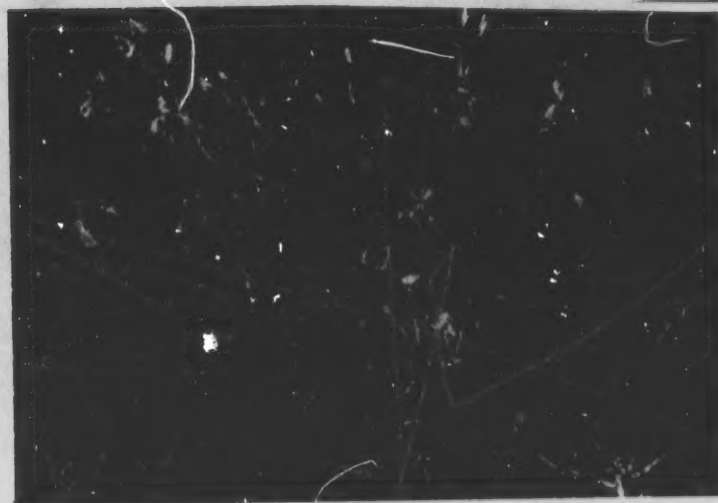
1117

72-E

TEST



1.



1.

TEST



k.



l.

TEST

9. Identify the following common weeds. Write the correct names in the blanks.

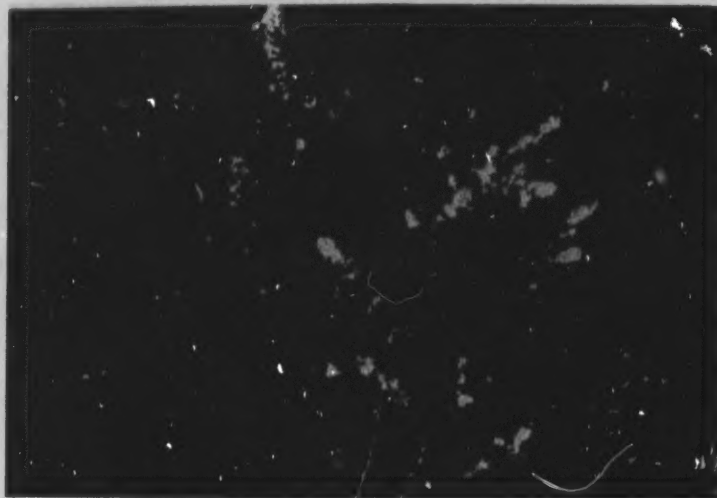
Annual ragweed
Heath aster
Ironweed

Black-eyed Susan
Buffalobur
Cocklebur

Common yarrow
Broadleaf milkweed
Common broomweed



a. _____



b. _____

TEST



c.



d.

TEST

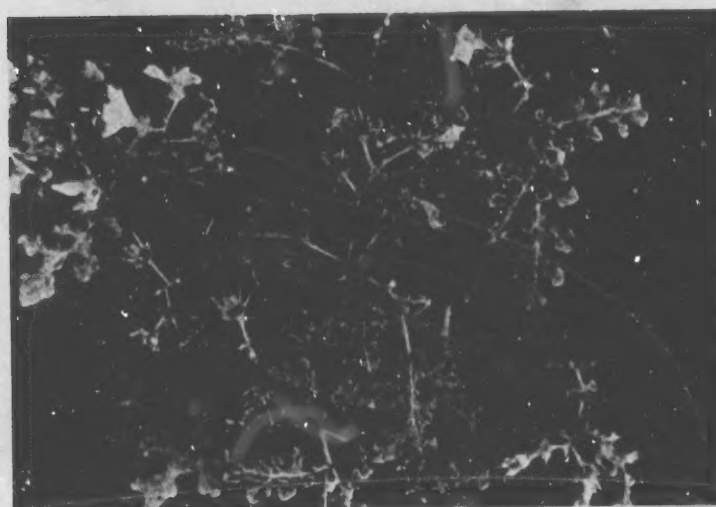
e.

f.

TEST



g.



h.

1123

78-E

TEST

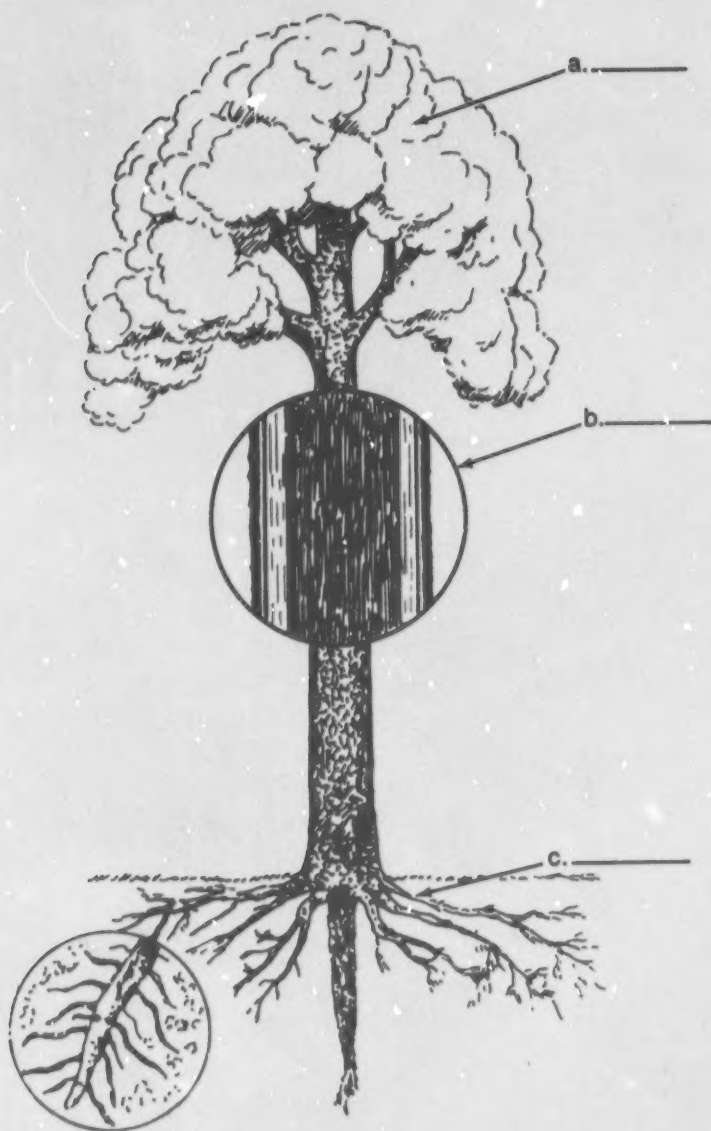


I.

1124

TEST

10. Label the parts of the tree illustrated below.



TEST

11. Identify the following common types of trees. Write the correct names in the blanks.



a. _____



b. _____



c. _____



d. _____

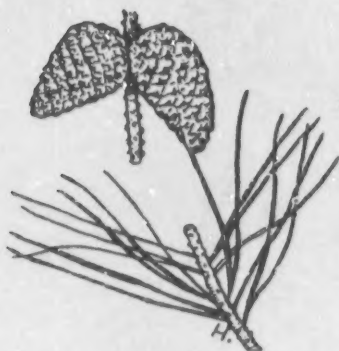
TEST



e. _____



f. _____



g. _____



h. _____

TEST



i. _____



j. _____



k. _____

INTRODUCTION TO PLANT SCIENCE
UNIT I

ANSWERS TO TEST

- | | | | | | | |
|----|----|----|----|----|----|----|
| 1. | a. | 15 | f. | 14 | k. | 12 |
| | b. | 7 | g. | 2 | l. | 11 |
| | c. | 1 | h. | 9 | m. | 6 |
| | d. | 4 | i. | 8 | n. | 3 |
| | e. | 5 | j. | 13 | o. | 10 |
-
- 2.
- a. 3
 - b. 4
 - c. 1
 - d. 5
 - e. 2
-
- 3.
- a. Soil fertility
 - b. Climatic conditions
 - c. Economic factors
 - d. Type of land
-
- 4.
- a. Wheat
 - b. Rye
 - c. Barley
 - d. Soybeans
 - e. Grain sorghum
 - f. Oats

ANSWERS TO TEST

5. a. Alfalfa
 b. Native grasses
 c. Sudan
 d. Millet

- | | | | | | |
|-------|---|----|---|----|---|
| 6. a. | 2 | g. | 1 | m. | 2 |
| b. | 1 | h. | 3 | n. | 5 |
| c. | 1 | i. | 3 | o. | 2 |
| d. | 5 | j. | 4 | | |
| e. | 4 | k. | 5 | | |
| f. | 3 | l. | 5 | | |

- | | | | |
|-------|---------------|----|--------------|
| 7. a. | Inflorescence | j. | Ligule |
| b. | Culm | k. | Blade |
| c. | Node | l. | Node |
| d. | Internode | m. | Sheath |
| e. | Blade | n. | First glume |
| f. | Collar | o. | Awn |
| g. | Shoot | p. | Florets |
| h. | Shoot | q. | Second glume |
| i. | Sheath | | |

8. a. Johnson grass
 b. Switchgrass
 c. Sideoats grama
 d. Blue grama

ANSWERS TO TEST

- e. Little bluestem
 - f. Hairy grama
 - g. Big bluestem
 - h. Weeping lovegrass
 - i. Bermuda grass
 - j. Buffalo grass
 - k. Wild rye
 - l. Indian grass
9. a. Common yarrow
- b. Heath aster
 - c. Cocklebur
 - d. Black-eyed Susan
 - e. Annual ragweed
 - f. Ironweed
 - g. Common broomweed
 - h. Buffalobur
 - i. Broadleaf milkweed
10. a. Crown
- b. Trunk
 - c. Roots

ANSWERS TO TEST

11. a. Black walnut
- b. White oak
- c. Black hickory
- d. Pecan
- e. American elm
- f. Bur oak
- g. Scotch pine
- h. Plains cottonwood
- i. Blackjack oak
- j. Pin oak
- k. Eastern red cedar

AGRICULTURAL MECHANICS ORIENTATION AND SAFETY UNIT I

UNIT OBJECTIVE

After completing this unit, the student should be able to identify basic agricultural mechanics tools and maintain a clean, safe work area in the agricultural mechanics shop. The student will show this knowledge by completing the assignment sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Define *agricultural mechanics*.
2. List areas of agricultural mechanics.
3. State the importance of agricultural mechanics to the total agricultural industry.
4. Identify basic carpentry tools.
5. Identify basic plumbing tools.
6. Identify common shop tools.
7. State reasons for maintaining a clean and orderly shop.
8. List areas of responsibility in maintaining an orderly shop area.
9. Match areas of the shop to the correct cleaning equipment and supplies needed for each area.
10. State the purposes of the safety color code system.
11. Match classes of fires to their correct descriptions.
12. State general safety precautions for the shop or work area.
13. Match agricultural mechanics occupational titles to their correct descriptions.
14. Analyze a safety film.
15. Analyze case studies to determine ways to prevent accidents.
16. Survey agricultural mechanics occupations.

AGRICULTURAL MECHANICS ORIENTATION AND SAFETY
UNIT I

SUGGESTED ACTIVITIES

- I. Unit contents
 - A. Objective sheet
 - B. Suggested activities
 - C. Supplements
 - 1. Supplement #1 — Shop Safety Pledge
 - 2. Supplement #2 — Sample Clean-Up Chart
 - 3. Supplement #3 — Clean-Up Chart Job Titles and Responsibilities
 - D. Transparency masters
 - 1. TM #1 — Color Designations in the Safety Color Code System
 - 2. TM #2 — Color Designations in the Safety Color Code System (Continued)
 - E. Information sheet
 - F. Assignment sheets
 - 1. Assignment Sheet #1 — Label Basic Carpentry Tools
 - 2. Assignment Sheet #2 — Label Basic Plumbing Tools
 - 3. Assignment Sheet #3 — Label Common Shop Tools
 - 4. Assignment Sheet #4 — Analyze a Safety Film
 - 5. Assignment Sheet #5 — Analyze Case Studies to Determine Ways to Prevent Accidents
 - 6. Assignment Sheet #6 — Survey Agricultural Mechanics Occupations
 - G. Answers to assignment sheets
 - H. Test
 - I. Answers to test

SUGGESTED ACTIVITIES

II. Instructor's guide

A. Obtain materials needed to supplement unit.

(NOTE: The following films are available on a free-loan basis to Oklahoma teachers. Oklahoma teachers may order from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center Film Library, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074. Out-of-state teachers must order from the addresses listed with the films.)

1. Films

- a. *An Option to See*, Color, 18 minutes, Oklahoma Society to Prevent Blindness, 1977. Available from Oklahoma Society to Prevent Blindness, 2751 Northwest Expressway, Suite 5, Oklahoma City, Oklahoma 73112.
- b. *Don't Push Your Luck*, Color, 12 minutes, Harvest Films, 1978. Available from Harvest Films, 309 Fifth Avenue, New York, New York 10016.
- c. *It's Up to You*, Color, 11 minutes, Harvest Films, n.d. Available from Harvest Films, 309 Fifth Avenue, New York, New York 10016.
- d. *We'll See Tomorrow*, Color, 10 minutes, Journal Films, 1972. Available from Journal Films, 930 Pitner Avenue, Evanston, Illinois 60602.

2. Audio visual materials

(NOTE: Order the following materials from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)

- a. *Tool Identification*, slide set
- b. Clean-up charts for each Vo-Ag shop class
- c. Shop safety signs for posting in the shop area
- d. *Shop Safety Skills*, a teaching kit that includes a manual, teacher's guide, student workbook, and filmstrip or slide set
- e. *Safety Color Coding for the Shop*, a teaching kit that includes a manual and filmstrip or slide set
- f. Transparencies

SUGGESTED ACTIVITIES

- B. Introduce unit by stressing to students how important agricultural mechanics is to the total agricultural industry.

SUGGESTIONS:

- Point out that all areas of agriculture use some type of equipment or mechanical device. Remind students that equipment is becoming increasingly technical and sophisticated.
- Ask students to name occupations that involve the use of modern, highly technical agricultural equipment.
- Stress to students that this unit of instruction can be the beginning of exploration into areas of interest that can lead to an exciting and rewarding occupation in agricultural mechanics.
- Refer students to Assignment Sheet #5. Have students complete Assignment Sheet #5 so that it can be discussed or turned in before the unit is finished.

- C. Provide students with objective sheet.

- D. Discuss unit and specific objectives.

(NOTE: The major thrusts of this unit are twofold: to teach students to identify common tools; and to increase student awareness as related to maintaining a clean, orderly, and safe work area.)

- E. Provide students with information and assignment sheets.

- F. Discuss information and assignment sheets.

1. Use Information Sheet, Section I to discuss the definition of agricultural mechanics.
2. Use Information Sheet, Section II to discuss areas of agricultural mechanics.

SUGGESTIONS:

- Point out and discuss the specific areas of agricultural mechanics that will be covered during the four-year local vocational agriculture program.
- Point out specific areas of study and skills to be attained in a specialized agricultural mechanics class if one is offered in your local department.

SUGGESTED ACTIVITIES

3. Emphasize the importance of agricultural mechanics in the total agricultural industry. Use Information Sheet, Section III.

SUGGESTIONS:

- Ask the students to name agricultural areas. Record the areas on the chalkboard, and discuss the mechanical skills or activities that go with each area.
 - Allow students to cite examples of maintenance adjustments or common repairs of machinery, tools, and equipment.
 - Explain to the students how additional construction must occur when any operation expands.
 - Stress the importance of keeping equipment adjusted. Equipment that is out of adjustment creates poor productivity because of breakdown, abnormal wear, or incorrect operation.
4. Discuss with the students the importance of becoming familiar with basic tools. Use Information Sheet, Sections IV through VI and Assignment Sheets #1 through #3.

SUGGESTIONS:

- Point out that in the world of work, correct tool names must be known and used to communicate effectively.
 - Show the *Tool Identification* slide set.
 - Pass around or show actual tools in class.
 - Discuss proper and improper uses of tools.
 - Use actual tools from the shop to give a tool identification test.
 - Use Assignment Sheets #1 through #3 as tool identification tests.
 - Point out additional tools related to various occupations.
5. Use Information Sheet, Section VII to stress the importance of maintaining a clean and orderly shop.

SUGGESTIONS:

- Use the *Shop Safety Skills* series.

SUGGESTED ACTIVITIES

- Discuss how workers can be more productive if everyone working in a shop knows where items are located and knows that tools can be found in their proper places.
 - Stress the importance of cleanliness and order for a safe work environment.
 - Emphasize that cleanliness (freedom from dust and dirt) helps prolong the life of tools by preventing them from prematurely wearing out.
6. Discuss areas of responsibility in maintaining a clean and orderly shop. Use Information Sheet, Section VIII and Supplements #2 and #3.

(NOTE: This would be an excellent opportunity to design your own clean-up system, using (as a guide) the supplements included in the suggested activities.)

SUGGESTIONS:

- Point out the major areas of the shop that need to be cleaned and the specific tasks needed to maintain a clean and orderly shop.
 - Add areas and tasks that may be needed to accommodate your particular shop.
7. Discuss cleaning equipment and supplies needed for cleaning major areas in the shop. Use Information Sheet, Section IX.

SUGGESTION:

- Take students on a tour of the shop, pointing out locations of equipment and supplies and explaining their proper uses.
8. Make students aware of the purposes of the safety color code system. Use Information Sheet, Section X, and Transparencies #1 and #2.

SUGGESTIONS:

- Use the *Safety Color Coding for the Shop* teacher's kit.
- Refer to *Shop Safety Skills* teaching kit materials.
- Arrange a field trip to tour a factory or shop where color coding and safety procedures are observed and practiced.

SUGGESTED ACTIVITIES

9. Use Information Sheet, Section XI to discuss classes of fires and their descriptions.

SUGGESTIONS:

- Stress to students the importance of having a sufficient number of properly charged fire extinguishers in proper locations.
- Discuss the advantages of having an extinguisher on every tractor and vehicle, in the shop, and in the home kitchen.
- Invite a firefighter to the class to discuss fire safety and extinguisher selection and use.

10. Discuss general safety precautions to follow in shop or work area. Use Information Sheet, Section XII, and Assignment Sheets #4 and #5.

SUGGESTIONS:

- Have students and parent or guardian complete Supplement #1 to ensure the student's commitment to safety.
- List on the chalkboard safety messages that students think would be appropriate in a vocational agriculture shop. How many of each message is needed? Where should messages be located?
- Show safety film and have students complete Assignment Sheet #4 after watching the film.
- Provide examples of what happens when safety precautions are violated.
- Make students aware of proper local school procedures to follow in case of an accident or injury. After discussing this information, have students complete Assignment Sheet #5.
- Take students on a tour of the shop to point out possible hazards and the locations of existing safety signs. If no safety signs exist, discuss with students where the safety signs should be located.

11. Discuss agricultural mechanics occupations. Use Information Sheet, Section XIII, and Assignment Sheet #6.

SUGGESTIONS:

- Invite a resource person to talk to the class about types of occupations related to agricultural mechanics.

SUGGESTED ACTIVITIES

- Compile a master list of additional occupations that students encountered while completing Assignment Sheet #6. Use master list to discuss students' interests and the pros and cons of the various occupations.

G. Give test.

III. Unit references

- A. Braker, Clifton R. "Pete." *Vocational Agriculture I*, rev. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1974.
- B. Dunn, James. *Machine Shop, Volume I*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1981.
- C. Hendrix, Laborn J. "Bud." *Commercial Carpentry*, rev. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1979.
- D. Hendrix, Laborn J. "Bud." *Millright Instructional Materials*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center and the Associated General Contractors of America, 1980.

SUGGESTED ACTIVITIES

SUPPLEMENT #1 — SHOP SAFETY PLEDGE

_____ High School

_____, who is enrolled in a vocational agriculture course, will, as a part of his/her shop experience, operate machines, providing that his/her parent or guardian gives written permission.

It is understood that each student will be given proper instruction, both in the use of the equipment and in correct safety procedures concerning it, before being allowed to operate it.

The student must assume responsibility for the following safety practices, and we therefore ask that he/she subscribe to the following safety pledge.

1. I will wear proper eye protection in the shop at all times.
2. I will follow all safety rules for the shop, as prescribed by the instructor.
3. I will only use a machine after first having received instructions and authorization from the instructor.
4. I will work in a manner which will be safe for others in the shop.
5. I will report any accident or injury to the instructor immediately.

Date _____ Student's Signature _____

I hereby give my consent to allow my son/daughter to operate all machines and equipment necessary in carrying out the requirements of the course in which he/she is enrolled.

Date _____ Parent's/Guardian's Signature _____

Parents are cordially invited to visit the shops to inspect the machines and to see them in operation at any time.

Date _____ Vo-Ag Instructor _____

Second Hour Vo-AgI Shop

NAME	CLEAN-UP CHART															JOB
	Weeks															
	1	2	3	4	5	6	7	8	9	10						
James Arthur	1	2	3	4	5	6	7	8	9	10						1. Supervisor
Sue Autry	2	3	4	5	6	7	8	9	10	11						2. Sweeper
Terry Banks	3	4	5	6	7	8	9	10	11	12						3. Handbroom Person
Joe Cantor	4	5	6	7	8	9	10	11	12	13						4. Toolroom Manager
Bill Davis	5	6	7	8	9	10	11	12	13	14						5. Extra
Renee Evans	6	7	8	9	10	11	12	13	14	15						6. Sweeper
Brian Fox	7	8	9	10	11	12	13	14	15	1						7. Washbasin Person
Barry Fuller	8	9	10	11	12	13	14	15	1	2						8. Handbroom Person
Jack Gaines	9	10	11	12	13	14	15	1	2	3						9. Restroom Person
Tara Grooms	10	11	12	13	14	15	1	2	3	4						10. Extra
Jana Hanks	11	12	13	14	15	1	2	3	4	5						11. Scrap Material Handler
Tony Hunk	12	13	14	15	1	2	3	4	5	6						12. Sweeper
George Ingram	13	14	15	1	2	3	4	5	6	7						13. Trash Can Person
Harold Lark	14	15	1	2	3	4	5	6	7	8						14. Sweeper
Greg Pierce	15	1	2	3	4	5	6	7	8	9						15. Handbroom Person

(Note: Notice that the jobs are numbered and that the job responsibilities rotate each week. Supplement #3 defines the various jobs. It should be posted in close proximity to the clean-up chart or at least each student must know the full responsibility that goes with the job.)

SUPPLEMENT #2 — SAMPLE CLEAN-UP CHART

SUGGESTED ACTIVITIES

SUGGESTED ACTIVITIES

SUPPLEMENT #3 — CLEAN-UP CHART JOB TITLES AND RESPONSIBILITIES

Supervisor

- Stops work by calling for clean-up in adequate time before bell
- Sees that all students do their jobs
- Covers for an absent student if an Extra is not available
- Makes sure that all equipment is turned off at end of hour

Sweeper — Works with other sweepers to see that entire shop floor is swept and that the collected dirt is properly disposed of in a trash can

Handbroom Person

- Sweeps tops of all pieces of equipment ahead of floor sweepers
- Sweeps off tables, workbenches, and welding booths ahead of floor sweepers
- Works with sweepers to pick up final piles, using handbroom and dust-pan
- Places final dirt piles in trash can

Toolroom Manager

- Checks out all tools to students
- Keeps tools clean
- Notifies instructor of any broken or improperly adjusted tools
- Checks in tools at end of class time
- Notifies instructor of any tool shortages or consumable supplies needed

Extra — Performs duties of any student who is absent

SUGGESTED ACTIVITIES

Washbasin Person

- Cleans area around washbasin
- Notifies instructor of any shortages such as towels or soap

Restroom Person

- Cleans restroom(s)
- Notifies instructor of any shortage of supplies

Scrap Material Handler

- Works with handbroom sweepers and floor sweepers to pick up scrap metal or wood and properly dispose of it
- Places all rags in proper containers

Trash Can Person — Properly disposes of any materials in shop trash cans by emptying them into the outside dumpster

Color Designations in the Safety Color Code System

- | | |
|-----------------|---|
| Green — | Designates noncritical parts of equipment and machined surfaces, nameplates, bearing surfaces, safety and first-aid equipment |
| Yellow — | Designates operating levers, wheels and handles; hazardous areas that may cause stumbling, falling, or tripping; caution |
| Orange — | Designates electrical switches; interior surfaces of doors on fuse and electrical boxes; movable guards and parts; inside of non-movable guards; traffic lanes and overhead hazards; dangerous parts of equipment that may cut, crush, shock, or otherwise injure |
| Red — | Designates location of fire-fighting equipment; emergency exits; off buttons, or levers for stopping electrical equipment; gasoline cans (with an additional yellow band around the can) |

Color Designations in the Safety Color Code System

(Continued)

Blue — Designates caution against starting equipment being repaired or using defective equipment

(NOTE: A blue tag should be attached to defective equipment. The tag should read "Out of Order.")

Ivory — Designates table edges, vise jaws, and edges of tool rests; used to reflect light and "show the way"

Aluminum — Used for table tops and work areas; provides contrast with work

AGRICULTURAL MECHANICS ORIENTATION AND SAFETY UNIT I

INFORMATION SHEET

- I. Agricultural mechanics — Area of agriculture that deals with mechanics, repair, maintenance, and construction of machinery, equipment, and facilities used in agriculture
- II. Areas of agricultural mechanics
 - A. Agricultural mechanical skills

(NOTE: This area of agricultural mechanics includes selection, sharpening, care, and correct use of shop tools and equipment; as well as woodworking, simple carpentry, and welding and related skills.)
 - B. Agricultural power and machinery

(NOTE: This area deals primarily with internal-combustion engines and the machinery on which these engines are used.)
 - C. Agricultural structures

(NOTE: This area of agricultural mechanics deals primarily with planning, construction, maintenance, and repair of agricultural buildings.)
 - D. Electrical power and processing

(NOTE: This area of agricultural mechanics includes all agriculturally related electrical work.)
 - E. Soil and water management

(NOTE: This area deals primarily with surveying and shaping the land to conserve water and soil.)
- III. Importance of agricultural mechanics to the total agricultural industry
 - A. Most agricultural work involves mechanical skills or activities
 - B. A large percentage of machinery is out of adjustment
 - C. Maintenance adjustments and repairs on machinery tools and equipment are ongoing and critical
 - D. Construction is necessary for expansion

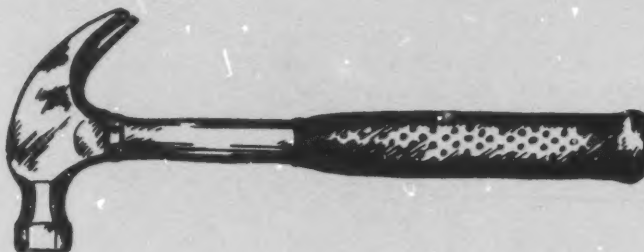
INFORMATION SHEET

IV. Basic carpentry tools (Figures 1-8)

(NOTE: Many of the following tools may be used by workers other than carpenters, and carpenters will use many tools in addition to those listed.)

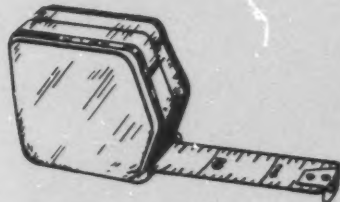
A. Claw hammer

FIGURE 1



B. Steel tape

FIGURE 2



C. Chalk line

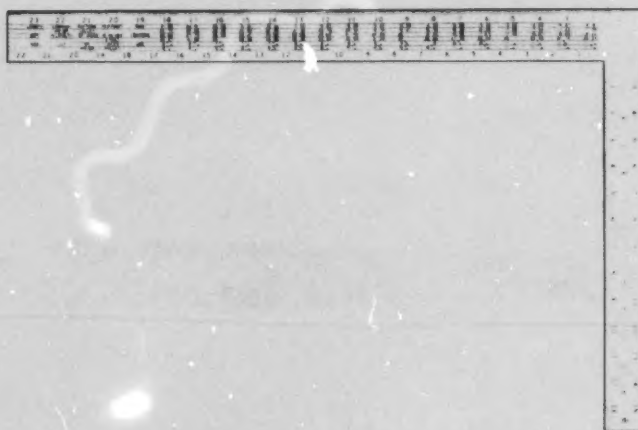
FIGURE 3



INFORMATION SHEET

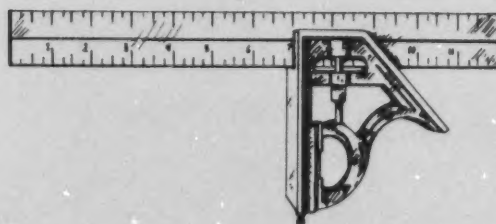
D. Framing square

FIGURE 4



E. Combination square

FIGURE 5



F. Wrecking bar

FIGURE 6



INFORMATION SHEET

G. Level

FIGURE 7



H. Handsaw

(NOTE: Handsaws are available as either crosscut or rip. The teeth determine the use of these saws.)

FIGURE 8



V. Basic plumbing tools (Figures 9-15)

A. Pipe wrench

FIGURE 9



INFORMATION SHEET

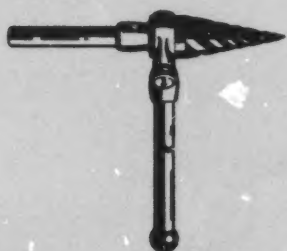
B. Pipe cutter

FIGURE 10



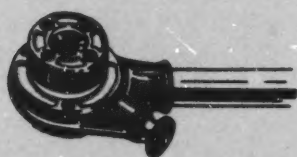
C. Pipe reamer

FIGURE 11



D. Pipe threading die and die stock

FIGURE 12



INFORMATION SHEET

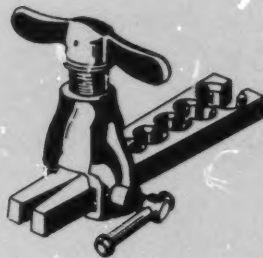
E. Tubing cutter

FIGURE 13



F. Flaring tool

FIGURE 14



G. Pipe vise

FIGURE 15



INFORMATION SHEET

VI. Common shop tools (Figures 16-30)

(NOTE: In some cases tools are identified by what was originally a brand name, but the brand name has now become the commonly accepted name.)

A. Ball-peen hammer

FIGURE 16



B. Shop hammer

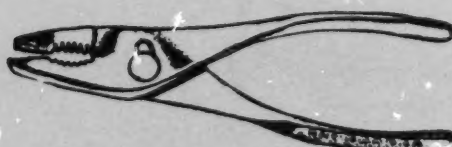
(NOTE: This type of hammer is available in a variety of weights and sizes. The heavier hammers are referred to as sledgehammers.)

FIGURE 17



C. Combination pliers

FIGURE 18



INFORMATION SHEET

D. Channel-lock pliers

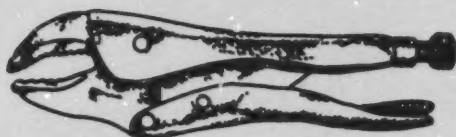
FIGURE 19



E. Vise-grip pliers

(NOTE: Vise-grips are available with a variety of jaws and clamps for holding many different types of materials.)

FIGURE 20



F. Bolt cutter

FIGURE 21



G. Crescent wrench

FIGURE 22



INFORMATION SHEET

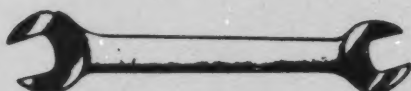
H. Combination wrench

FIGURE 23



I. Open-end wrench

FIGURE 24



J. Offset screwdriver

FIGURE 25



K. Box-end wrench

FIGURE 26



L. Socket

FIGURE 27



INFORMATION SHEET

M. Ratchet

FIGURE 28



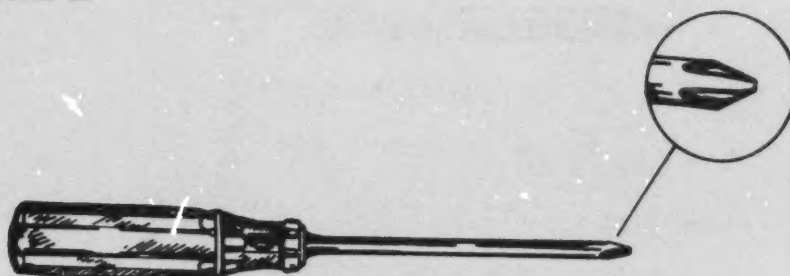
N. Common screwdriver

FIGURE 29



O. Phillips screwdriver

FIGURE 30



VII. Reasons for maintaining a clean and orderly shop

- A. To allow workers to be more productive
- B. To promote safety
- C. To prolong the life of tools and equipment

INFORMATION SHEET

VIII. Areas of responsibility in maintaining an orderly shop area

(NOTE: To develop a shop clean-up system for a vocational agriculture shop class, each student is assigned cleaning responsibilities.)

A. Floor cleaning

EXAMPLES: Sweep floors after each class period.
Work with people who are dusting equipment and work surfaces to assure that entire work area gets cleaned.
Return cleaning equipment and supplies to proper location.

B. Equipment cleaning and maintenance

EXAMPLES: Clean dust from shop equipment and work surfaces, using handbrooms or dust rags.
Notify instructor of any equipment or cords needing repair or adjustments.
Return cleaning equipment and supplies to proper locations.
Make sure that all equipment is turned off.

C. Toolroom management

EXAMPLES: Check tools in and out to students during class time.
Clean tools.
Notify instructor of broken, improperly adjusted, and missing tools.

D. Scrap materials handling

EXAMPLE: Properly dispose of or store scrap materials.

E. Restroom maintenance

(NOTE: In many cases, restroom maintenance is the responsibility of the school maintenance department.)

EXAMPLES: Clean fixtures and floors in the restroom.
Replenish supplies.
Notify instructor of shortage of restroom supplies.

F. Supervision

EXAMPLES: Notify students of when to start clean-up.
See that all students are doing their jobs.
Notify instructor of any problem in the clean-up system.

INFORMATION SHEET

IX. Cleaning equipment and supplies needed for major cleaning areas in the shop

A. Floors

1. Pushbrooms

2. Floor sweep

(NOTE: Floor sweep is a treated sawdust material used in conjunction with sweeping to minimize dust.)

3. Oil absorbents

(NOTE: Oil absorbents are used to soak up petroleum product spills such as oil.)

4. Dustpans

B. Shop equipment

1. Handbrooms

2. Dust cloths

C. Restroom

1. Toilet bowl brushes

2. Toilet bowl cleaners

3. Mop

4. Mop bucket and wringer

5. Disinfectant detergent

6. Glass cleaner and paper towels for mirrors

X. Purposes of the safety color code system

A. Promoting safety by designating critical parts and areas

B. Increasing life of machines through proper use

C. Reducing eyestrain, tension, and fatigue by contrasting material from machines and work areas

D. Promoting better housekeeping by providing pleasing environment

INFORMATION SHEET

XI. Classes of fires and their descriptions

- A. Class A — Fires that occur in ordinary combustible materials such as wood, rags, and rubbish
- B. Class B — Fires that occur with flammable liquids such as gasoline, oil, grease, paints, and thinners
- C. Class C — Fires that occur in or near electrical equipment such as motors, switchboards, and electrical wiring
- D. Class D — Fires that occur with combustible metals such as magnesium

(NOTE: The most feasible type of fire extinguisher to have available is the commercial multi-purpose A-B-C extinguisher. Only in very rare cases would one need an extinguisher for Class D fires.)

XII. General safety precautions for the shop or work area

(NOTE: Additional safety precautions related to specific areas of instruction will be taught in agricultural mechanics.)

- A. Always wear proper eye protection
- B. Keep shop and work area clean and well-organized
- C. Put all items in their proper places after use
- D. Use tools for their specific purpose only
- E. Keep tools and equipment properly adjusted or repaired
- F. Know location and proper use of fire extinguishers
- G. Make sure that fire extinguishers are properly charged
- H. Repair or replace all worn or frayed electrical cords
- I. Report to the instructor any tools or equipment needing repair
- J. Properly store work materials at end of work period
- K. Place oily or greasy rags in covered metal cans
- L. Turn off all electrical equipment after use
- M. Never touch metal that could be hot
- N. Never work with tools or equipment with which you have not received instruction
- O. Know and observe local safety procedures given by your instructor

INFORMATION SHEET

XIII. Agricultural mechanics occupational titles and their descriptions

(NOTE: Many other specific agricultural-mechanics-related occupations exist. In many of these occupations, individuals start as helpers and improve their skills for employment advancement.)

- A. Electrician's helper — Assists electrician in installing and repairing electrical wiring, fixtures, and equipment
- B. Welder — Performs all types of tasks related to various types of welding and oxy-gas cutting and heating
- C. Farm machine operator — Operates, maintains, adjusts, and performs minor repairs on all types of tractors and farming equipment
- D. Maintenance mechanic's helper — Assists in repairing and maintaining all types of machinery and equipment
- E. Farm equipment mechanic — Maintains, repairs, and overhauls all types of farm machinery and equipment; may install and repair plumbing and electrical systems, as well as construct and repair buildings and structures
- F. Farm machinery set-up mechanic — Uncrates, erects or assembles, adjusts, and lubricates farm machinery
- G. Small engine mechanic — Repairs small gasoline engines for all types of farm equipment
- H. Carpenter's helper — Assists carpenter with all types of wood construction; may require use of numerous hand and power tools
- I. Fence builder — Erects and repairs metal and wooden fences and gates around industrial establishments, residences, or farms; uses hand and power tools
- J. Surveyor's assistant — Assists surveyor in all types of tasks related to land surveying

AGRICULTURAL MECHANICS ORIENTATION AND SAFETY
UNIT I

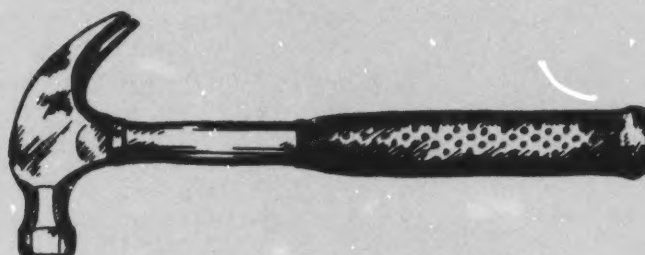
ASSIGNMENT SHEET #1 — LABEL BASIC CARPENTRY TOOLS

NAME _____

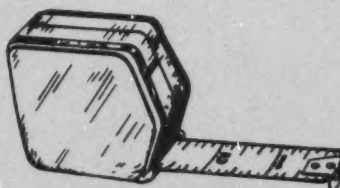
SCORE _____

A number of basic carpentry tools may be used to repair or adjust farm equipment and machinery. Selection of the correct tool for the job is very important, and in order to select the correct tool, you must be able to recognize and name basic carpentry tools.

Below are illustrations of basic carpentry tools that may be used in agricultural mechanics. Write the correct name for each tool in the blanks provided.



A. _____



B. _____

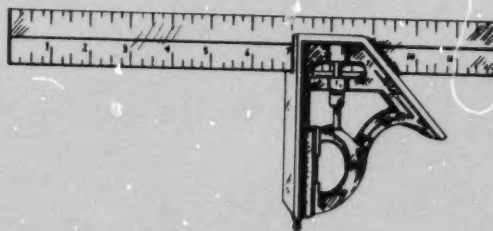


C. _____

ASSIGNMENT SHEET #1



D.

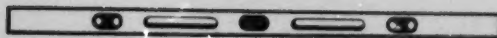


E.

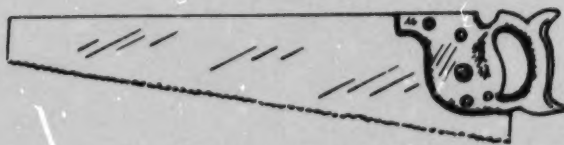
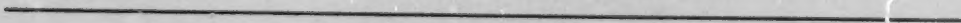


F.

ASSIGNMENT SHEET #1



G.



H.



AGRICULTURAL MECHANICS ORIENTATION AND SAFETY
UNIT I

ASSIGNMENT SHEET #2— LABEL BASIC PLUMBING TOOLS

NAME _____

SCORE _____

Basic plumbing tools are often used in agricultural mechanics to install, repair, or replace such farm equipment and machinery as irrigation systems, farmhouse and barn plumbing, watering troughs and trucks, and so on. It is important that you be able to recognize and name basic plumbing tools.

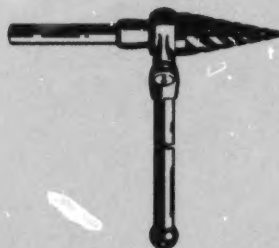
Below are illustrations of basic plumbing tools. Write the correct name for each tool in the blanks provided.



A. _____



B. _____



C. _____

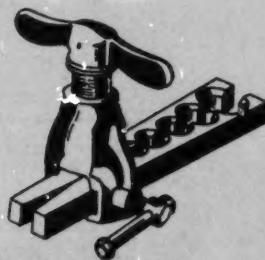
ASSIGNMENT SHEET #2



D. _____



E. _____



F. _____



G. _____

AGRICULTURAL MECHANICS ORIENTATION AND SAFETY
UNIT I

ASSIGNMENT SHEET #3— LABEL COMMON SHOP TOOLS

NAME _____ SCORE _____

Tools commonly used in the shop are basic to numerous farm equipment and machinery repairs. It is important that you be able to recognize the names of common shop tools.

Below are illustrations of common shop tools. Write the correct name for each tool in the blanks provided.



A. _____



B. _____



C. _____

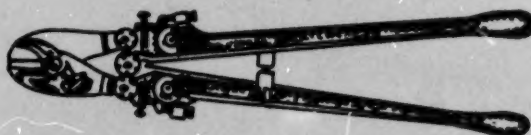
ASSIGNMENT SHEET #3



D. _____



E. _____



F. _____



G. _____

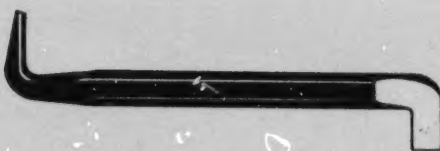


H. _____



I. _____

ASSIGNMENT SHEET #3



J.



K.



L.



M.



N.

ASSIGNMENT SHEET #3



O. _____

AGRICULTURAL MECHANICS ORIENTATION AND SAFETY
UNIT I

ASSIGNMENT SHEET #4 — ANALYZE A SAFETY FILM

NAME _____ SCORE _____

Often people are able to learn from the mistakes or misfortunes of others. Numerous films exist on the subject of safety. The questions below may help you understand and retain the information presented in a safety film.

If your instructor chooses to show such a film to the class, answer the questions below and be prepared to discuss the film in class.

- A. Film title: _____
- B. Did the film deal with a specific accident(s)? _____
- C. If yes, what was the type of accident? _____

- D. What specific tools or equipment were involved, if any? _____

- E. What specific safety message or precaution was brought out in the film?

- F. What could have been done to prevent the accident? _____

AGRICULTURAL MECHANICS ORIENTATION AND SAFETY
UNIT I

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

- A. Claw hammer
- B. Steel tape
- C. Chalk line
- D. Framing square
- E. Combination square
- F. Wrecking bar
- G. Level
- H. Handsaw

Assignment Sheet #2

- A. Pipe wrench
- B. Pipe cutter
- C. Pipe reamer
- D. Pipe threading die and die stock
- E. Tubing cutter
- F. Flaring tool
- G. Pipe vise

Assignment Sheet #3

- A. Ball-peen hammer
- B. Shop hammer
- C. Combination pliers
- D. Channel-lock pliers

ANSWERS TO ASSIGNMENT SHEETS

- E. Vise-grip pliers
- F. Bolt cutter
- G. Crescent wrench
- H. Combination wrench
- I. Open-end wrench
- J. Offset screwdriver
- K. Box-end wrench
- L. Socket
- M. Ratchet
- N. Common screwdriver
- O. Phillips screwdriver

Assignment Sheet #4 — Evaluated to the satisfaction of the instructor

Assignment Sheet #5 — Evaluated to the satisfaction of the instructor

Assignment Sheet #6 — Evaluated to the satisfaction of the instructor

AGRICULTURAL MECHANICS ORIENTATION AND SAFETY
UNIT I

TEST

NAME _____

SCORE _____

1. Define *agricultural mechanics*.

2. List three areas of agricultural mechanics.

a. _____

b. _____

c. _____

3. State two reasons for the importance of agricultural mechanics to the total agricultural industry.

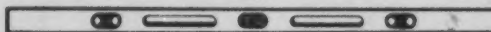
a. _____

b. _____

4. Identify the following basic carpentry tools. Write the correct names in the blanks.

Claw hammer
Steel tape
Chalk line
Framing square

Combination square
Wrecking bar
Level
Handsaw

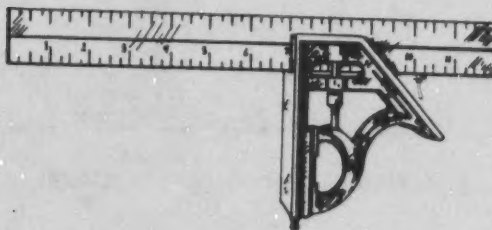


a. _____

TEST



b. _____



c. _____



d. _____

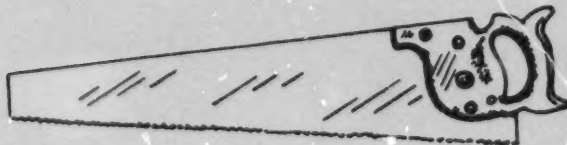
TEST



e.

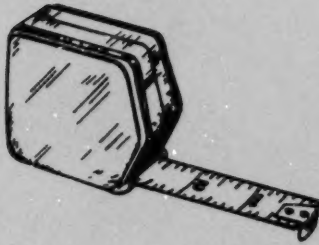


f.



g.

TEST

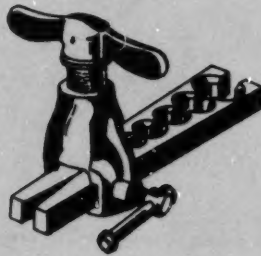


h. _____

5. Identify the following basic plumbing tools. Write the correct names in the blanks.

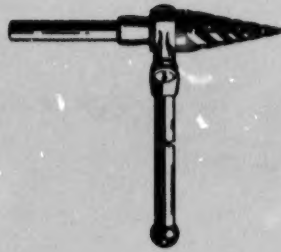
Pipe wrench
Pipe cutter
Pipe reamer
Pipe vise

Pipe threading die and die stock
Tubing cutter
Flaring tool

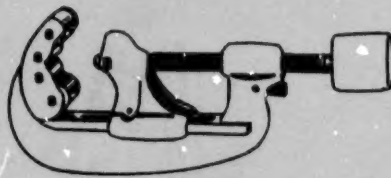


a. _____

TEST



b. _____



c. _____



d. _____



e. _____

TEST



f. _____



g. _____

6. Identify the following common shop tools. Write the correct names in the blanks.

Ball-peen hammer
 Shop hammer
 Combination pliers
 Channel-lock pliers
 Vise-grip pliers
 Bolt cutter
 Crescent wrench
 Common screwdriver

Combination wrench
 Open-end wrench
 Offset screwdriver
 Box-end wrench
 Socket
 Ratchet
 Phillips screwdriver



a. _____

TEST



b.



c.

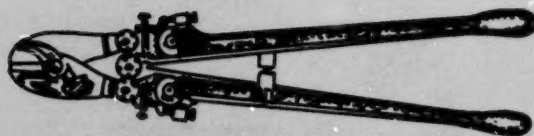


d.

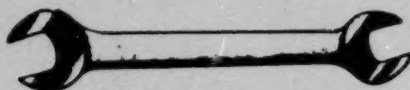


e.

TEST



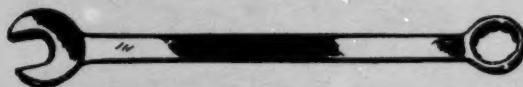
f. _____



g. _____



h. _____



i. _____



j. _____



k. _____

TEST



l. _____



m. _____



n. _____



o. _____

TEST

7. State two reasons for maintaining a clean and orderly shop.
- _____
 - _____
8. List four areas of responsibility in maintaining an orderly shop area.
- _____
 - _____
 - _____
 - _____
9. Match areas of the shop to the correct cleaning equipment and supplies needed for each area. Write the correct numbers in the blanks.
- | | | |
|----------|--|-------------------|
| _____ a. | Toilet bowl brushes; toilet bowl cleaners; mop; mop bucket and wringer; disinfectant detergent; glass cleaner and paper towels for mirrors | 1. Floors |
| _____ b. | Pushbrooms; floor sweep; oil absorbents; dustpans | 2. Shop equipment |
| _____ c. | Handbrooms; dust cloths | 3. Restroom |
10. State three purposes of the safety color code system.
- _____
 - _____
 - _____

TEST

11. Match classes of fires to their correct descriptions. Write the correct numbers in the blanks.

- | | | |
|---------|--|------------|
| _____a. | Fires that occur in ordinary combustible materials such as wood, rags, and rubbish | 1. Class B |
| _____b. | Fires that occur with flammable liquids such as gasoline, oil, grease, paints, and thinners | 2. Class C |
| _____c. | Fires that occur in or near electrical equipment such as motors, switchboards, and electrical wiring | 3. Class A |
| _____d. | Fires that occur with combustible metals such as magnesium | 4. Class D |

12. State ten general safety precautions for the shop or work area.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____
- g. _____
- h. _____
- i. _____
- j. _____

13. Match agricultural mechanics occupational titles to their correct descriptions. Write the correct numbers in the blanks. Titles and descriptions are continued on the next page.

- | | | |
|---------|---|----------------------------|
| _____a. | Assists electrician in installing and repairing electrical wiring, fixtures, and equipment | 1. Farm equipment mechanic |
| _____b. | Performs all types of tasks related to various types of welding and oxy-gas cutting and heating | 2. Surveyor's assistant |

TEST

- | | | |
|---------|---|------------------------------------|
| _____c. | Operates, maintains, adjusts, and performs minor repairs on all types of tractors and farming equipment | 3. Welder |
| _____d. | Assists in repairing and maintaining all types of machinery and equipment | 4. Carpenter's helper |
| _____e. | Maintains, repairs, and overhauls all types of farm machinery and equipment; may install and repair plumbing and electrical systems, as well as construct and repair buildings and structures | 5. Electrician's helper |
| _____f. | Uncrates, erects or assembles, adjusts, and lubricates farm machinery | 6. Fence builder |
| _____g. | Repairs small gasoline engines for all types of farm equipment | 7. Farm machine operator |
| _____h. | Assists carpenter with all types of wood construction; may require use of numerous hand and power tools | 8. Small engine mechanic |
| _____i. | Erects and repairs metal and wooden fences and gates around industrial establishments, residences, or farms; uses hand and power tools | 9. Maintenance mechanic's helper |
| _____j. | Assists surveyor in all types of tasks related to land surveying | 10. Farm machinery set-up mechanic |

(NOTE: Test questions 14-16 list the assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

14. Analyze a safety film.
15. Analyze case studies to determine ways to prevent accidents.
16. Survey agricultural mechanics occupations.

AGRICULTURAL MECHANICS ORIENTATION AND SAFETY
UNIT I

ANSWERS TO TEST

1. Area of agriculture that deals with mechanics, repair, maintenance, and construction of machinery, equipment, and facilities used in agriculture
2. Answer should include any three of the following
 - a. Agricultural mechanical skills
 - b. Agricultural power and machinery
 - c. Agricultural structures
 - d. Electrical power and processing
 - e. Soil and water management
3. Answer should include any two of the following
 - a. Most agricultural work involves mechanical skills or activities
 - b. A large percentage of machinery is out of adjustment
 - c. Maintenance adjustments and repairs on machinery tools and equipment are ongoing and critical
 - d. Construction is necessary for expansion
4.
 - a. Level
 - b. Claw hammer
 - c. Combination square
 - d. Framing square
 - e. Wrecking bar
 - f. Chalk line
 - g. Handsaw
 - h. Steel tape

ANSWERS TO TEST

5.
 - a. Flaring tool
 - b. Pipe reamer
 - c. Tubing cutter
 - d. Pipe wrench
 - e. Pipe threading die and die stock
 - f. Pipe cutter
 - g. Pipe vise

6.
 - a. Ratchet
 - b. Offset screwdriver
 - c. Common screwdriver
 - d. Vise-grip pliers
 - e. Ball-peen hammer
 - f. Bolt cutter
 - g. Open-end wrench
 - h. Channel-lock pliers
 - i. Combination wrench
 - j. Box-end wrench
 - k. Socket
 - l. Crescent wrench
 - m. Shop hammer
 - n. Phillips screwdriver
 - o. Combination pliers

7. Answer should include any two of the following
 - a. To allow workers to be more productive
 - b. To promote safety
 - c. To prolong the life of tools and equipment

ANSWERS TO TEST

8. Answer should include any four of the following
- a. Floor cleaning
 - b. Equipment cleaning and maintenance
 - c. Toolroom management
 - d. Scrap materials handling
 - e. Restroom maintenance
 - f. Supervision
9. a. 3
- b. 1
- c. 2
10. Answer should include any three of the following
- a. Promoting safety by designating critical parts and areas
 - b. Increasing life of machines through proper use
 - c. Reducing eyestrain, tension, and fatigue by contrasting material from machines and work areas
 - d. Promoting better housekeeping by providing pleasing environment
11. a. 3
- b. 1
- c. 2
- d. 4

ANSWERS TO TEST

12. Answer should include any ten of the following
- a. Always wear proper eye protection
 - b. Keep shop and work area clean and well-organized
 - c. Put all items in their proper places after use
 - d. Use tools for their specific purpose only
 - e. Keep tools and equipment properly adjusted or repaired
 - f. Know location and proper use of fire extinguishers
 - g. Make sure that fire extinguishers are properly charged
 - h. Repair or replace all worn or frayed electrical cords
 - i. Report to the instructor any tools or equipment needing repair
 - j. Properly store work materials at end of work period
 - k. Place oily or greasy rags in covered metal cans
 - l. Turn off all electrical equipment after use
 - m. Never touch metal that could be hot
 - n. Never work with tools or equipment with which you have not received instruction
 - o. Know and observe local safety procedures given by your instructor
- 13.
- | | | | |
|----|---|----|----|
| a. | 5 | f. | 10 |
| b. | 3 | g. | 8 |
| c. | 7 | h. | 4 |
| d. | 9 | i. | 6 |
| e. | 1 | j. | 2 |
14. Evaluated to the satisfaction of the instructor
15. Evaluated to the satisfaction of the instructor
16. Evaluated to the satisfaction of the instructor

**ARC WELDING
UNIT II****UNIT OBJECTIVE**

After completing this unit, the student should be able to construct a butt weld safely, using the arc welding process and proper equipment. The student will show this knowledge by completing the job sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with arc welding.
2. Match to their correct descriptions kinds of arc welding machines.
3. Select from a list common pieces of equipment used in arc welding.
4. List types of electrodes.
5. Select from a list the most common sizes of electrodes used in arc welding.
6. Identify characters in the AWS electrode classification system.
7. List the purposes of flux.
8. List methods of establishing an arc.
9. Select from a list characteristics of proper arc length.
10. Label the parts of the welding process.
11. List welding positions.
12. Identify kinds of welds.
13. Identify types of weld joints.
14. Describe the effects of raising and lowering the current setting on arc welding machines.
15. State causes of poor welds.
16. State safety precautions used in arc welding.

OBJECTIVE SHEET

17. Demonstrate the ability to
 - a. Start, stop, and run a bead.
 - b. Construct a pad.
 - c. Construct a butt weld.

ARC WELDING
UNIT II

SUGGESTED ACTIVITIES

- I. Unit contents
 - A. Objective sheet
 - B. Suggested activities
 - C. Transparency masters
 - 1. TM #1 — Welding Process
 - 2. TM #2 — Welding Positions
 - 3. TM #3 — AWS Classification of Electrodes
 - 4. TM #4 — Types of Weld Joints
 - 5. TM #5 — Kinds of Welds
 - D. Information sheet
 - E. Job sheets
 - 1. Job Sheet #1 — Start, Stop, and Run a Bead
 - 2. Job Sheet #2 — Construct a Fad
 - 3. Job Sheet #3 — Construct a Butt Weld
 - F. Test
 - G. Answers to test
- II. Instructor's guide
 - A. Order materials to supplement unit.
 - 1. Electrode selection wall chart and electrode guide books.
(NOTE: Obtain from your local welding supplier.)

SUGGESTED ACTIVITIES

2. Film — *Arc Welding*, 30 minutes, color, Association Films, 1971. Available from Association Films, 600 Grand Avenue, Richfield, New Jersey 07657.

(NOTE: This film explains major arc welding processes, required equipment, and progress made in the field. It is available to Oklahoma teachers on a free-loan basis from the Oklahoma State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center Film Library, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074. Out-of-state teachers must order from the address listed above.)

3. Clean $\frac{1}{4}$ -inch, $\frac{3}{8}$ -inch, and $\frac{3}{16}$ -inch plates and coupons for the students to weld on.

(NOTE: Check other catalogs and resources, and order materials needed.)

- B. Make sample pad and butt welds like those to be made in the job sheets, as well as samples of the different types of welds and joints illustrated on the transparencies.
- C. Check all welding equipment for proper condition and quantity: helmets, electrodes, helmet lenses, safety glasses, and gloves.
- D. Before starting the unit, have students begin bringing to class proper protective clothing; provide a storage place for the clothes.
- E. Make or obtain transparencies.

(NOTE: Transparencies are available from the Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)

- F. Introduce unit by emphasizing the benefits of knowing how to arc weld.

SUGGESTIONS:

- Stress the well-paying job opportunities that exist for welders.
 - Emphasize to students that they can save money by making their own repairs and by building their own farming or ranching shop projects.
- G. Provide students with objective sheet.

SUGGESTED ACTIVITIES

- H. Discuss unit and specific objectives.

SUGGESTIONS:

- Emphasize the importance of being familiar with the terms and definitions in order to understand and be able to communicate the technical terminology associated with arc welding.
- Point out how the information in the unit will build through the unit to prepare the student to actually perform the job sheets at the end of the unit.

- I. Provide students with information and job sheets.

- J. Discuss information sheet.

1. Discuss terms and definitions associated with arc welding; use Information Sheet, Section I.

SUGGESTIONS:

- Show Transparencies #1 and #2 to illustrate some of the terms and definitions.
 - Bring actual items into the classroom to illustrate appropriate terms.
 - Using a small ball-peen hammer and metal plate, crumble flux from an electrode when discussing electrodes and flux.
2. Discuss the different kinds of arc welding machines and their uses; use Information Sheet, Section II.

SUGGESTIONS:

- Take students on a tour of the shop to show them as many of the types of welding machines as are available.
- Point out that welding on AC and DC machines using a stick electrode is referred to as *shielded metal arc welding (SMAW)*; welding on a TIG machine is referred to as *gas tungsten arc welding (GTAW)*; and welding on an MIG machine is referred to as *gas metal arc welding (GMAW)*.
- Give examples of the uses for each kind of welding machine.
- Invite a local supplier to discuss kinds of welding machines and their uses.

SUGGESTED ACTIVITIES

3. Discuss common arc welding equipment; use Information Sheet, Section III.

SUGGESTIONS:

- Take students to the shop to show them the components that make up the arc welding equipment.
 - Explain to the students what to look for when checking the equipment to make sure that it is in good condition.
 - Demonstrate to the students how to make helmet adjustments and lens changes.
 - Show students the result of handling hot metal with leather gloves.
 - Show the film, *Arc Welding*. After showing the film, allow for student/teacher discussion of the film.
4. Discuss electrode types and sizes, the AWS electrode classification system, and the purposes of flux. Combine Sections IV through VII of the Information Sheet and Transparency #3.

SUGGESTIONS:

- Discuss various types, sizes, and classifications of electrodes. Show the students examples of each type, and pass examples around the class.
 - Point out the types of information that can be obtained from the electrode selection wall chart and the electrode pocket guide books.
5. Discuss methods of establishing an arc. Use Information Sheet, Section VIII.

SUGGESTION:

- Demonstrate the procedures in the classroom, using a metal plate and an electrode, or take students to the shop and equip them with helmets so that they may watch an on-the-job demonstration.
6. Discuss characteristics of proper arc length; use Information Sheet, Section IX.

SUGGESTION:

- Demonstrate arc length in the shop, with small groups of students gathered around a welding table where they can see the length of arc being maintained.

SUGGESTED ACTIVITIES

7. Discuss parts of the welding process. Use Information Sheet, Section X and Transparency #1.

SUGGESTIONS:

- Show and discuss Transparency #1. Emphasize again the importance of proper arc length.
- Demonstrate the actual welding process in the shop by running a bead.
- Invite a local welder to demonstrate the welding process to the students. Have the welder discuss the important aspects of the process.

8. Discuss weld positions, using Information Sheet, Section XI and Transparency #2.

SUGGESTIONS:

- In the classroom, simulate the positions with a hand-held piece of metal and hand-held electrode.
- Demonstrate the positions by performing welding activities in the shop.
- Invite a local welder to demonstrate the various welding positions.

9. Use Information Sheet, Section XII and Transparency #5 to illustrate the different kinds of welds.

SUGGESTIONS:

- Show and discuss Transparency #5.
- Show prepared samples of actual welds.

10. Use Information Sheet, Section XIII and Transparency #4 to illustrate types of weld joints.

SUGGESTIONS:

- Show and discuss Transparency #4.
- Show prepared samples of actual weld joints.

SUGGESTED ACTIVITIES

- Point out that the bead weld in Information Sheet, Section XII is used to make an edge joint.
 - Point out that a groove weld is used to make a butt joint.
 - Point out that the fillet weld is used to make T, corner, and lap joints.
11. Discuss the effects of raising and lowering current settings on arc welding machines. Use Information Sheet, Section XIV.

SUGGESTIONS:

- Using thin plate, demonstrate how raising the current can produce enough heat to burn a hole completely through the metal. Point out that a much lower current setting will not burn through the metal.
 - Explain that on the electrode selection wall chart, different current settings are suggested for different thicknesses of metal and different electrode sizes.
12. Discuss reasons for poor welds. Use Information Sheet, Section XV.
(NOTE: Practically all sections of the Information Sheet apply here.)

SUGGESTIONS:

- Point out to the students that much of the information discussed thus far relates and applies to making either high-quality or poor welds.
 - Show and discuss prepared examples of poor welds as related to each of the reasons for poor welds listed in Information Sheet, Section XV.
 - Demonstrate in the shop each of the reasons for poor welds listed in Section XV. Show the students the resultant poor welds.
13. Use Information Sheet, Section XVI to discuss safety precautions in arc welding.

SUGGESTIONS:

- Cite instances with which you are familiar that may have resulted in an accident or tragedy due to someone's lack of observing and practicing proper safety precautions.
- Allow students to share instances that they may know of that resulted from not observing proper safety precautions.
- Specifically discuss each safety precaution as it relates to personal safety and the safety of others in the immediate work area.

SUGGESTED ACTIVITIES

- K. Demonstrate and discuss procedures outlined in the job sheets. Have students perform Job Sheets #1 through #3.

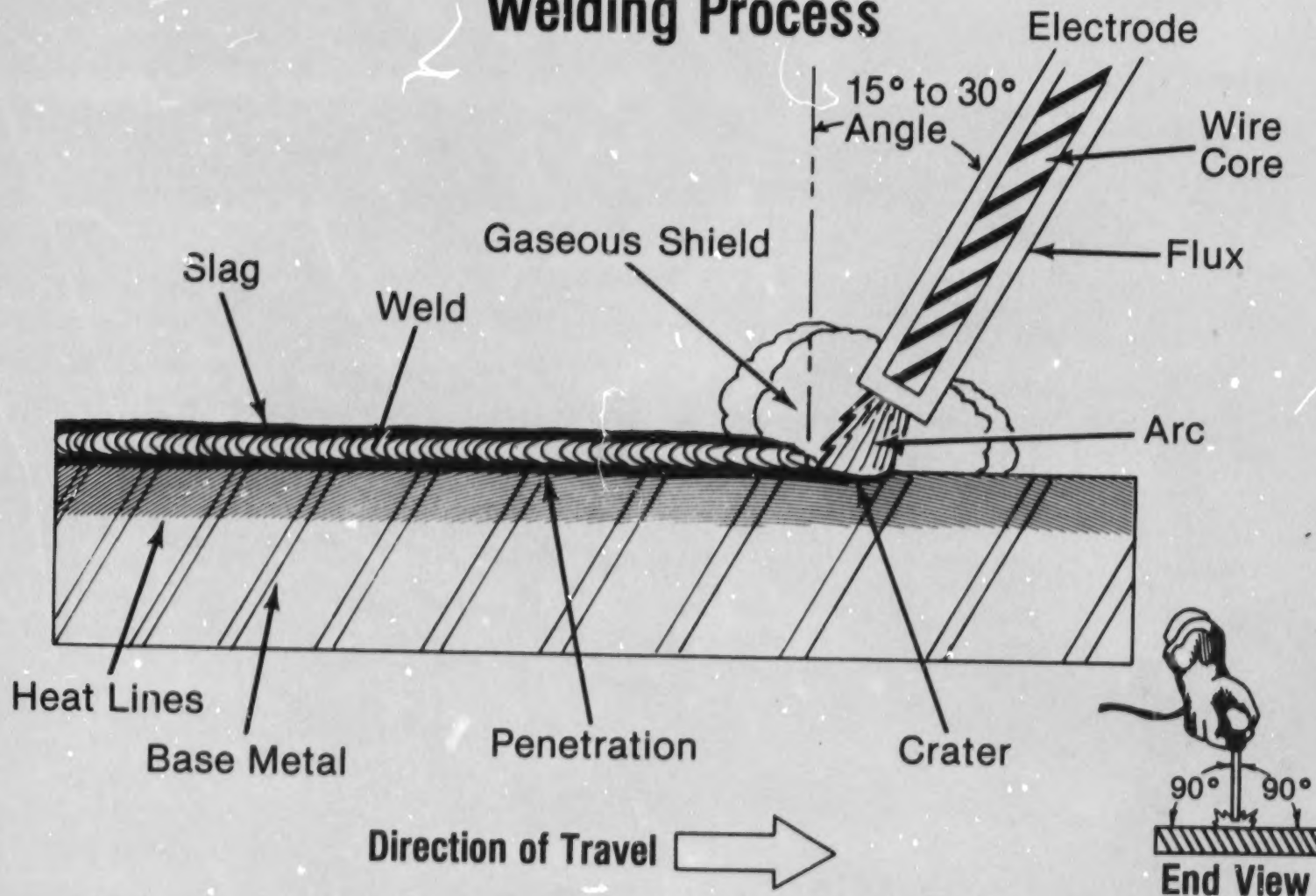
(NOTE: While supervising students individually as needed, allow students to practice the skills outlined in the job sheets until they become proficient.)

- L. Give test.

III. Unit references

- A. Althouse, Andrew D., et al. *Modern Welding*. South Holland, Illinois: The Goodheart-Willcox Co., Inc., 1980.
- B. Braker, Clifton R. "Pete." *Vocational Agriculture I*, rev. ed. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1974.

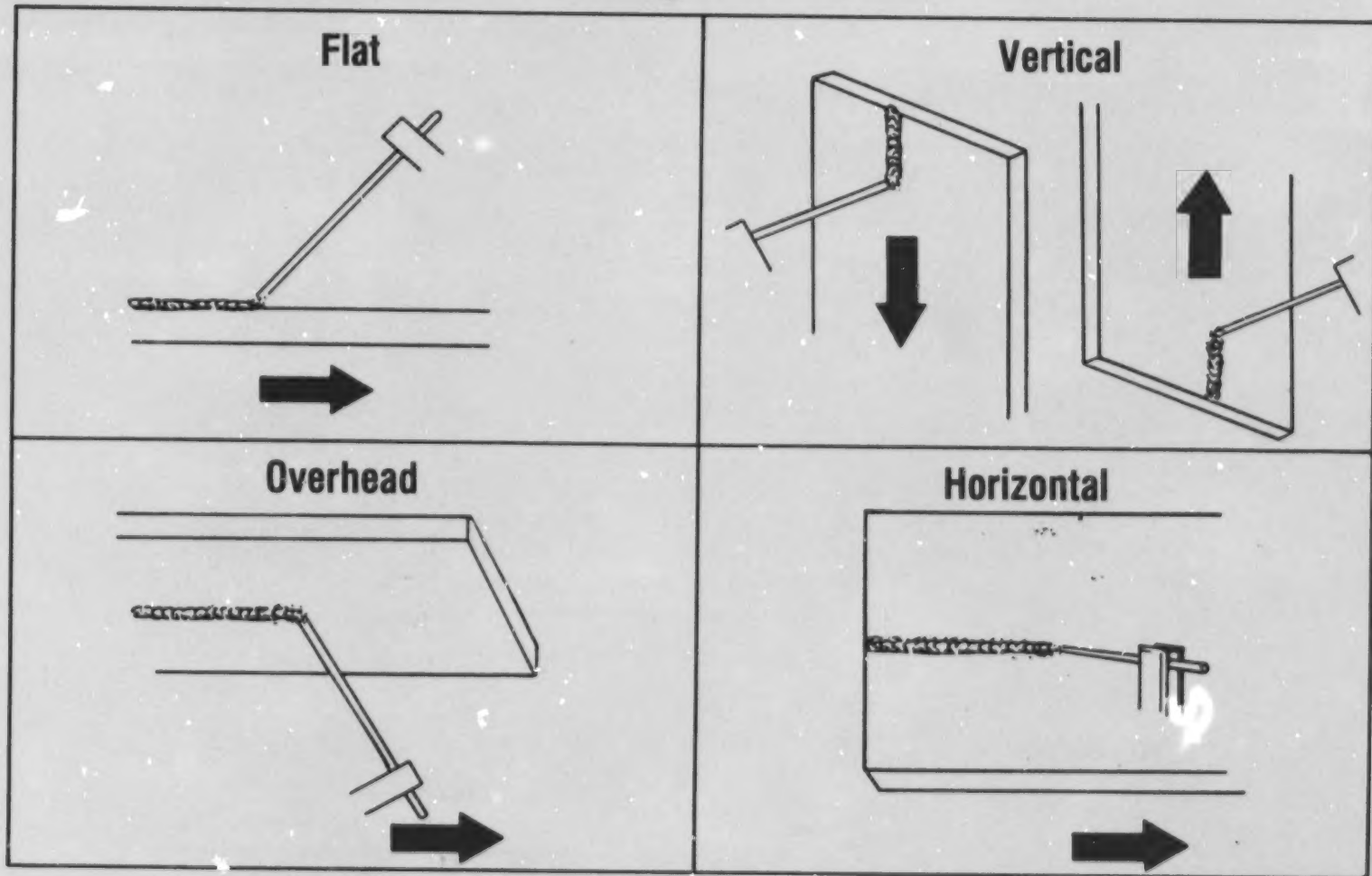
Welding Process



1199

1200

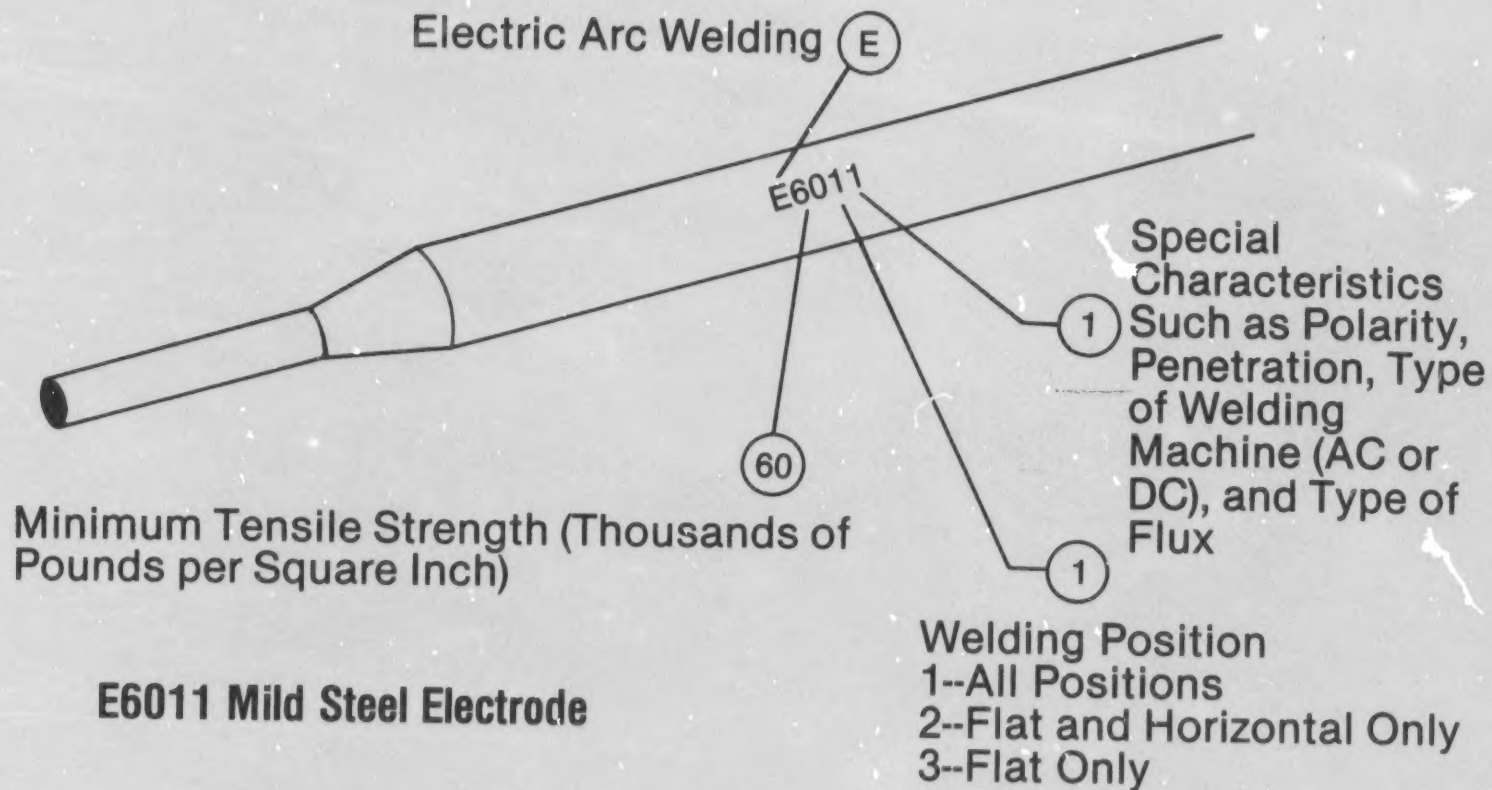
Welding Positions



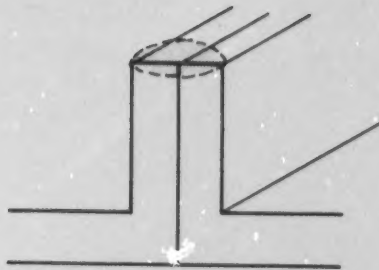
1201

1202

AWS Classification of Electrodes



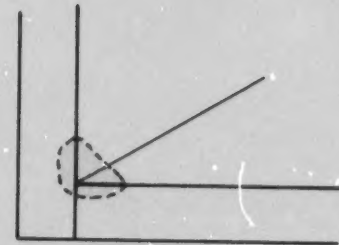
Types of Weld Joints



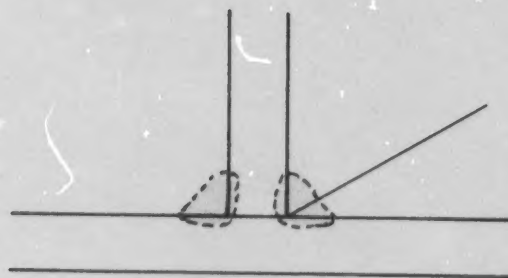
Edge Joint



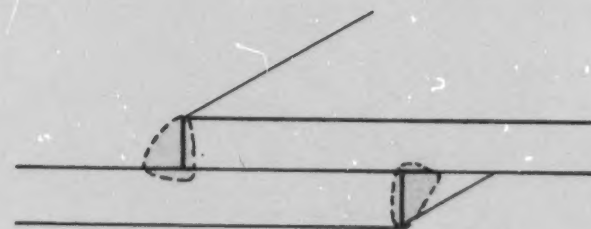
Butt Joint



Corner Joint



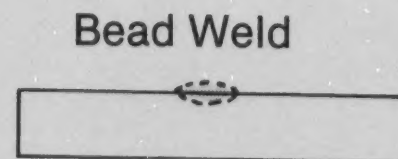
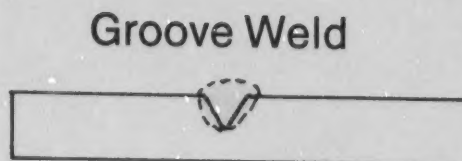
T-Joint



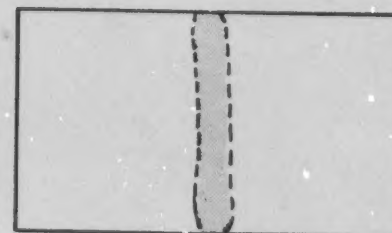
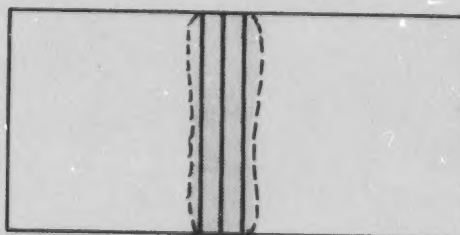
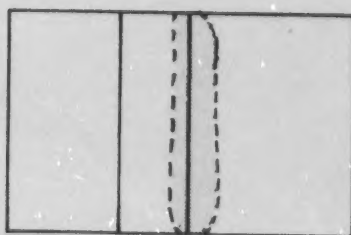
Lap Joint

Kinds of Welds

End Views



Top Views



ARC WELDING
UNIT II

INFORMATION SHEET

I. Terms and definitions

A. Arc welding — Process of using an electric arc as the source of heat to join two or more pieces of metal by the fusion process

B. Arc — Flow of electric current across a narrow gap

(NOTE: In arc welding, this narrow gap is the distance from the end of the electrode to the base metal.)

C. Base metal — Metal to be welded

D. Electrode — Metal rod, coated with flux, that conducts a current from electrode holder to base metal

(NOTE: The electrode is sometimes referred to as *the rod* or *stick*.)

E. Flux — Chemical coating on electrodes; used to promote fusion of metals during welding

F. Bead weld — Weld made by one pass of electrode

G. Pad — Piece of practice metal on which parallel beads are deposited side by side

H. Tack weld — Small weld used to hold base metals together temporarily

I. Butt joint — Weld between two metal parts on the same plane

J. Penetration — Extent to which weld metal combines with base metal as measured from surface of base metal

K. Crater — Depression in face of a weld, usually at point where weld stopped

L. Slag — Nonmetallic by-product of welding process; made of flux and non-metallic impurities

M. Tensile strength — Maximum pull stress in pounds per square inch that a weld specimen will withstand

N. American Welding Society (AWS) — One of many associations and societies that establish codes and/or standards for the welding industry

INFORMATION SHEET

II. Kinds of arc welding machines

(NOTE: AC, DC, and AC/DC welding machines are used for stick welding. This type of welding is also referred to as *shielded metal arc welding* or *SMAW*.)

- A. Alternating current (AC) — Machine that alternates direction of flow of electric current 120 times per second
- B. Direct current (DC) — Machine in which the electric current flows in one direction

(NOTE: DC machines have a manual control that allows the operator to change the direction of current flow. The two possible directions are referred to as *straight polarity* and *reverse polarity*.)

- C. Alternating/direct current (AC/DC) — Machine that is capable of supplying AC or DC current for welding
- D. Tungsten inert gas (TIG) — Machine that may use either AC or DC current; uses an inert shielding gas and a nonconsumable tungsten electrode

(NOTE: TIG welding is commonly referred to as *gas tungsten arc welding* or *GTAW*.)

- E. Metal inert gas (MIG) — Machine that may use AC or DC current; uses an inert shielding gas and a consumable wire electrode that is fed automatically from a spool

(NOTE: MIG welding is commonly referred to as *gas metal arc welding* or *GMAW*.)

III. Common arc welding equipment

- A. Welding machine
- B. Electrode holder with lead
- C. Ground clamp with lead
- D. Helmet

(CAUTION: Be sure that the shield or helmet lens is not cracked or broken.)

- E. Leather gloves

(CAUTION: Never handle hot metal with welding gloves; the heat will cause the leather to harden and will ruin the gloves.)

- F. Chipping hammer

INFORMATION SHEET

G. Eye protection (Figures 1 and 2)

EXAMPLES:

FIGURE 1



Safety Glasses

FIGURE 2



Goggles

H. Wire brush

I. Electrodes

IV. Types of electrodes

A. Mild steel

B. High-carbon steel

C. Hard-surfacing

D. Alloys/special-purpose

V. Common sizes of electrodes used in arc welding

(NOTE: Sizes of electrodes range from $\frac{1}{16}$ inch to $\frac{3}{8}$ inch. Electrode size is determined by the diameter of the bare end of the electrode.)

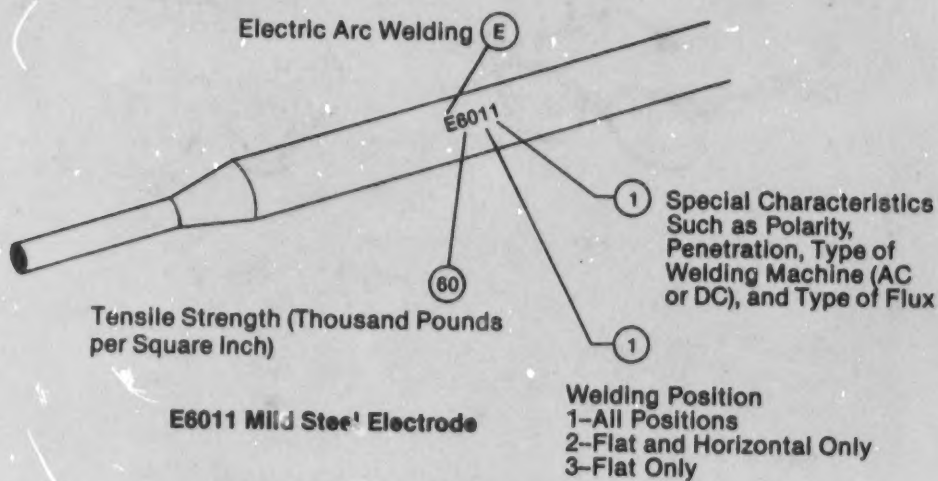
A. $\frac{3}{32}$ inchB. $\frac{1}{8}$ inchC. $\frac{9}{32}$ inch

INFORMATION SHEET

VI. Meanings of characters in the AWS electrode classification system (Figure 3)

EXAMPLE:

FIGURE 3



- A. Letter E — Denotes that electrode is for electric arc welding
- B. First two numerals — Indicate tensile strength in thousands of pounds per square inch
- C. Third numeral — Indicates position to be used
- D. Fourth numeral — Gives code for special characteristics of electrode

(NOTE: For a more thorough explanation of the special characteristics, you should refer to an electrode selection chart or electrode pocket guide.)

VII. Purposes of flux

- A. Stabilizing arc
- B. Shielding molten puddle from air

(NOTE: As the flux is burned from the arc heat, part of it forms a gaseous cloud that shields the puddle from surrounding air.)

- C. Floating impurities out of puddle

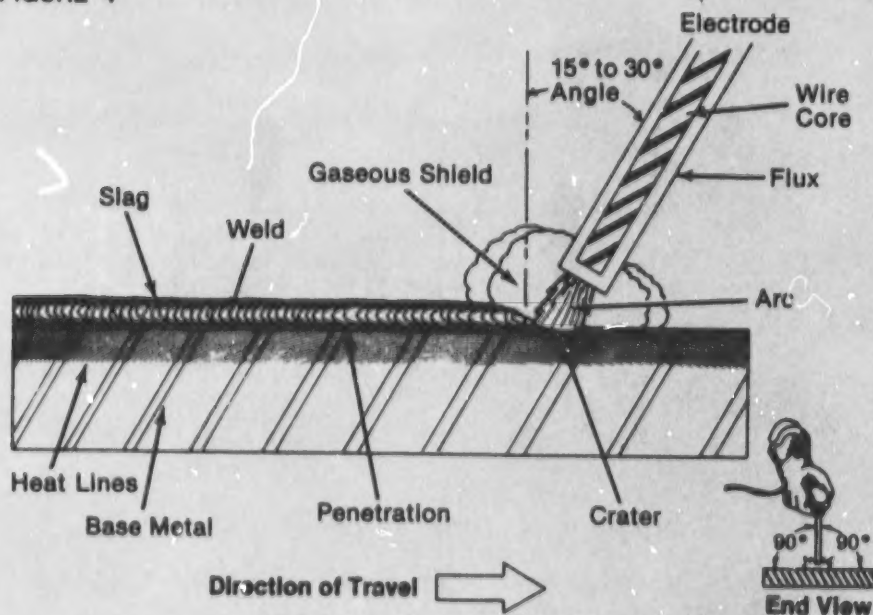
(NOTE: Part of the burned or melted flux becomes a liquid part of the molten puddle.)

INFORMATION SHEET

- D. Forming slag, which slows cooling
- E. Increasing speed
- VIII. Methods of establishing an arc
 - A. Scratching (similar to striking a match)
 - B. Tapping
- IX. Characteristics of proper arc length
 - A. End of electrode is same distance from base metal as diameter of electrode
 EXAMPLE: With a $\frac{1}{8}$ -inch electrode, the arc length is $\frac{1}{8}$ inch.
 - B. Steady hum from welding machine and a "frying" sound at arc
- X. Parts of the welding process (Figure 4)

(NOTE: For left-handed welders, the direction of travel would be the opposite of that shown in Figure 4; also the angle of the electrode would be the same but in the opposite direction.)

FIGURE 4



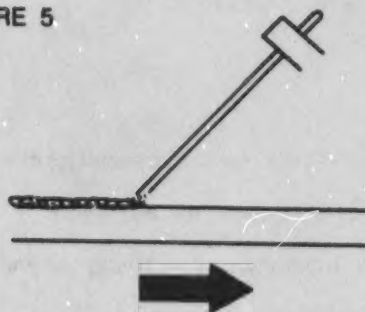
INFORMATION SHEET

XI. Welding positions (Figures 5-8)

A. Flat

EXAMPLE:

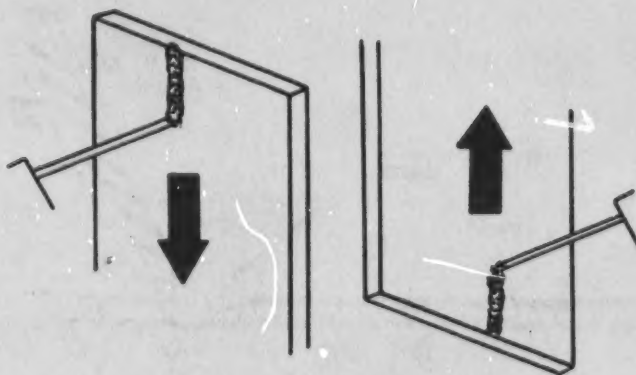
FIGURE 5



B. Vertical

EXAMPLE:

FIGURE 6

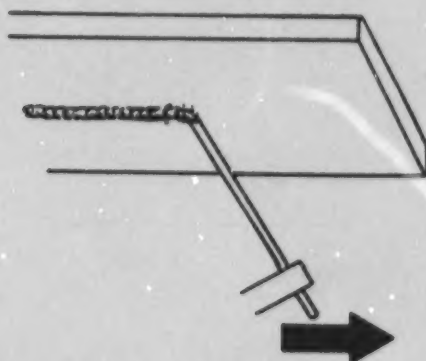


INFORMATION SHEET

C. Overhead

EXAMPLE:

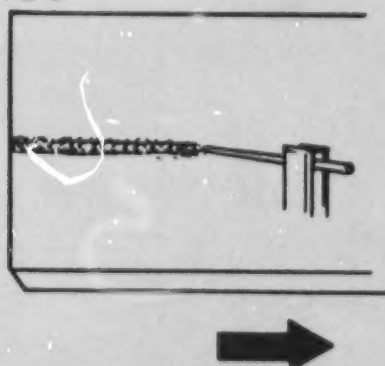
FIGURE 7



D. Horizontal

EXAMPLE:

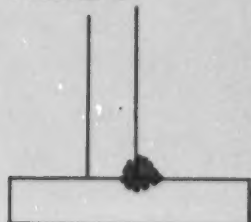
FIGURE 8



XII. Kinds of welds (Figures 9-11)

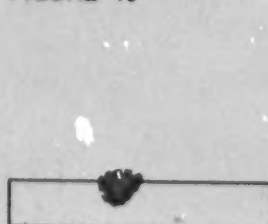
A. Fillet

FIGURE 9



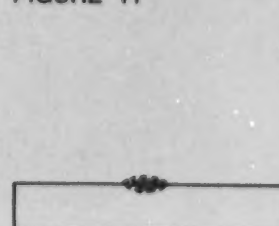
B. Groove

FIGURE 10



C. Bead

FIGURE 11

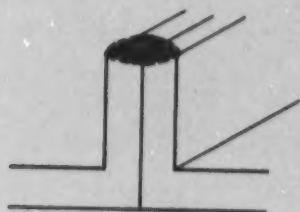


INFORMATION SHEET

XIII. Types of weld joints (Figures 12-16)

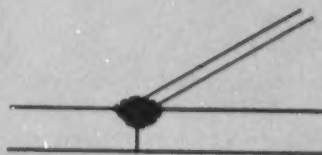
A. Edge

FIGURE 12



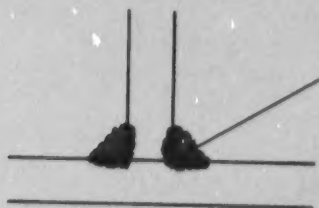
B. Butt

FIGURE 13



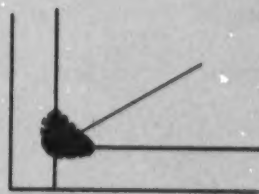
C. T

FIGURE 14



D. Corner

FIGURE 15



E. Lap

FIGURE 16



1216

INFORMATION SHEET

XIV. Effects of raising and lowering the current setting on arc welding machines

- A. Raising current — Produces more heat
- B. Lowering current — Produces less heat

(NOTE: On thicker metals, more heat is necessary for penetration.)

XV. Causes of poor welds

- A. Machine adjustment too hot or too cold
- B. Electrode size too large or too small
- C. Improper movement of electrode
- D. Improper angle of electrode
- E. Improper base metal preparation
- F. Arc length too long or too short
- G. Improper speed of travel

XVI. Safety precautions in arc welding

- A. Always look away from arc with naked eye
- B. Use a helmet that is in good condition

(NOTE: Acceptable lens shades for arc welding range from #9 to #12. The larger the number, the darker the lens will be. Magnifying lenses that may benefit some individuals are also available.)

(CAUTION: Notify your instructor immediately if the helmet material or shaded lens is cracked or broken.)

- C. Wear suitable clothing to protect all parts of the body

EXAMPLE: Long-sleeved shirt of nonsynthetic fiber, leather gloves, pants with cuffs turned down, high-topped leather shoes or boots

- D. Yell "cover" before striking an arc

(CAUTION: Never strike an arc or weld until you are sure that those in the vicinity are wearing protective eye equipment or will look away from the arc.)

- E. Clear welding area of all combustible or flammable materials

INFORMATION SHEET

- F. Avoid picking up hot metal with hands or leather gloves; use pliers
- G. Weld only in places with good ventilation
- H. Always open main switch or unplug machine when checking or working on welding machine
- I. Do not leave electrode holder on welding table or in direct contact with grounded metal
- J. Be sure that welding cables are not frayed or missing insulation
- K. Stand on dry footing when welding
- L. Keep welding area clean and free of tools and metals that might cause stumbling or tripping
- M. Know and follow local school procedures when dealing with eye injuries or burns

**ARC WELDING
UNIT II****JOB SHEET #1 — START, STOP, AND RUN A BEAD****I. Equipment and materials**

- A. Clean piece of metal $\frac{1}{4}$ -inch to $\frac{3}{8}$ -inch thick, 4 inches by 4 inches
(NOTE: The metal should be free of rust, paint, oil, or any other substance.)
- B. Welding machine
- C. Electrode holder and lead
- D. Ground clamp and lead
- E. Helmet
- F. Leather gloves
- G. E-6011 electrodes, $\frac{1}{8}$ -inch
- H. Welding booth or table
- I. Safety glasses or goggles (OSHA approved)
- J. Chipping hammer
- K. Wire brush
- L. Proper protective clothing

II. Procedure

(CAUTION: Safety glasses or goggles should be worn at all times in the shop.)

- A. Set amperage on welding machine according to instructor's recommendations
- B. Arrange leads to reach work area easily
- C. Attach ground clamp to welding booth or table
- D. Position and adjust welding helmet for maximum comfort
- E. Put on welding gloves

JOB SHEET #1

- F. Position metal, on table or booth, for comfort during welding
- (NOTE: Right-handed welders should weld from left to right; the opposite is correct for left-handed welders.)
- G. Place bare end of electrode in electrode holder
- H. Turn on welding machine while holding electrode holder in one hand
- I. Lower helmet and strike arc 1 inch from edge where bead is to begin (Figures 17-19)

FIGURE 17

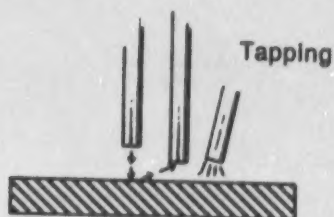


FIGURE 18

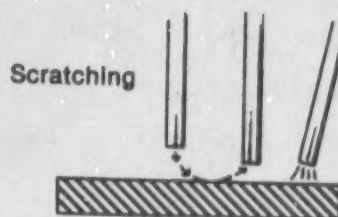
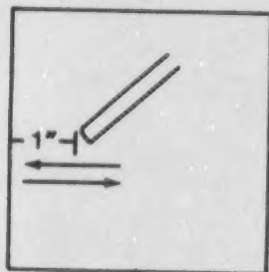


FIGURE 19



To Start

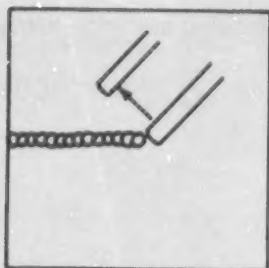
- J. When arc burns brightly, move to edge, maintaining correct arc length, and begin forming puddle
- K. Weld across metal 2 inches

JOB SHEET #1

- L. To stop bead, move electrode back through puddle and lift up (Figure 20)

(NOTE: Moving the electrode back through the puddle prevents cracks from forming in the puddle.)

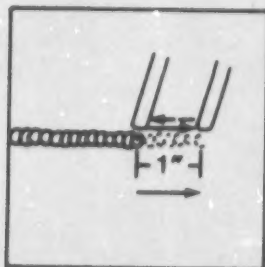
FIGURE 20



To Stop

- M. Restart by lowering helmet and striking arc about 1 inch in front of crater (Figure 21)

FIGURE 21



To Restart

- N. When arc burns brightly, move back through crater and then resume bead

(NOTE: Moving back through the crater is necessary in order for beads to blend with one another without a change in continuity.)

- O. Turn off welding machine when bead across metal is complete

- P. Use chipping hammer and wire brush to remove slag from bead

(NOTE: Show the bead to your instructor for evaluation.)

JOB SHEET #1

- Q. Continue to practice running beads

(NOTE: Concentrate your practice on running straight beads all the way across the pad without stopping. Also concentrate on keeping the beads parallel to each other.)

- R. Turn off welding machine

- S. Clean work area, and return all equipment to its proper place

ARC WELDING
UNIT II

JOB SHEET #2 — CONSTRUCT A PAD

I. Equipment and materials

- A. Clean piece of metal $\frac{1}{4}$ -inch to $\frac{3}{8}$ -inch thick, 4 inches by 4 inches
(NOTE: The metal should be free of rust, paint, oil, or any other substance.)
- B. Welding machine
- C. Electrode holder and lead
- D. Ground clamp and lead
- E. Helmet
- F. Leather gloves
- G. E-6011 electrodes, $\frac{1}{8}$ -inch
- H. Welding booth or table
- I. Safety glasses or goggles (OSHA approved)
- J. Chipping hammer
- K. Wire brush
- L. Proper protective clothing

II. Procedure

(CAUTION: Safety glasses or goggles should be worn at all times in the shop.)

- A. Set amperage on welding machine according to instructor's recommendations
- B. Arrange leads to reach work area easily
- C. Attach ground clamp to welding booth or table
- D. Position and adjust welding helmet for maximum comfort
- E. Put on welding gloves
- F. Position metal, on table or booth, for comfort during welding

JOB SHEET #2

- G. Place bare end of electrode in electrode holder
- H. Turn on welding machine while holding electrode holder in one hand
- I. Lower helmet and strike arc at point to begin pad (Figure 22)

FIGURE 22



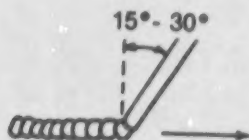
- J. Lay a straight bead across the plate, using a weaving motion or motion suggested by your instructor

(NOTE: When using E-6011 electrode, you must use some type of rod manipulation in running a bead.)

- K. Hold electrode at a 15-degree to 30-degree angle in the direction of travel; lower electrode as rod burns away to maintain correct arc length (Figure 23)

(NOTE: There should be 90 degrees on each side of the electrode.)

FIGURE 23



- L. Move electrode steadily across pad

(NOTE: Right-handed welders should weld across the pad from left to right. The opposite direction is correct for left-handed welders.)

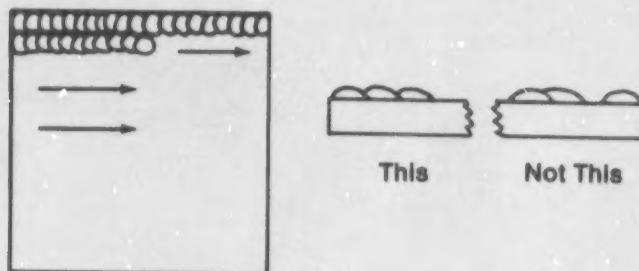
- M. Turn welding machine off after each bead is run unless continued use is planned

(NOTE: Lay electrode holder in a safe position.)

JOB SHEET #2

- N. Use chipping hammer and wire brush to clean slag from each bead before starting next bead
- O. Run beads, overlapping each, until pad is full (Figure 24)

FIGURE 24



- P. Turn off welding machine when pad is full
(NOTE: Show your completed pad to the instructor for evaluation.)
- Q. Clean work area, and return all equipment to its proper place

ARC WELDING
UNIT II

JOB SHEET #3 — CONSTRUCT A BUTT WELD

I. Equipment and materials

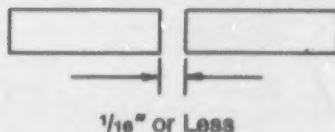
- A. Two clean pieces of metal $\frac{3}{16}$ -inch thick, 3 inches by 6 inches
- B. Welding machine
- C. Electrode holder with leads
- D. Ground clamp with leads
- E. Helmet
- F. Leather gloves
- G. E-6011 electrodes, $\frac{1}{8}$ -inch
- H. Welding table or booth
- I. Safety glass or goggles (OSHA approved)
- J. Chipping hammer
- K. Wire brush
- L. Proper protective clothing

II. Procedure

(CAUTION: Safety glasses or goggles should be worn at all times in the shop.)

- A. Prepare equipment and welding machine for welding
- B. Place two pieces of metal parallel to each other, leaving a space of $\frac{1}{16}$ inch maximum between them (Figure 25)

FIGURE 25

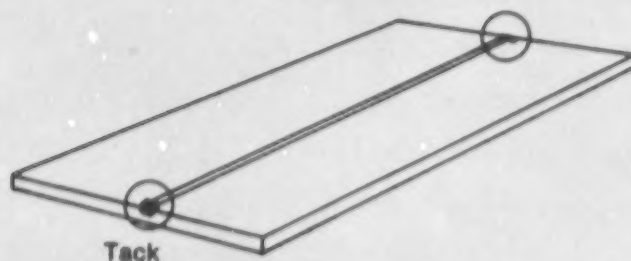


JOB SHEET #3

- C. Tack weld pieces together at both ends (Figure 26)

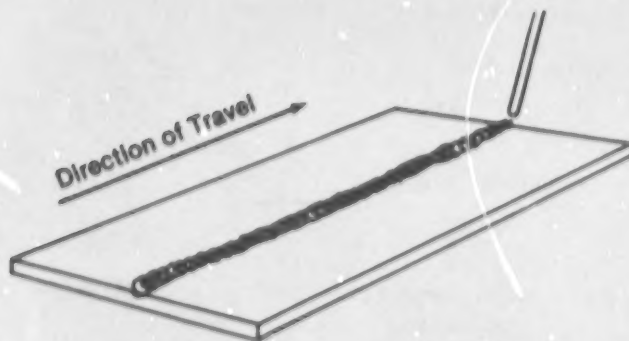
(NOTE: If the pieces are not tacked, the gap will spread due to heat distortion.)

FIGURE 26



- D. Complete weld using a single pass (Figure 27)

FIGURE 27



- E. Turn off welding machine
- F. Chip slag and brush weld
- (NOTE: Show your completed butt weld to the instructor for evaluation.)
- G. Clean work area, and return all equipment to its proper place

ARC WELDING UNIT II

TEST

NAME _____

SCORE _____

1. Match to their correct definitions terms associated with arc welding. Write the correct numbers in the blanks.

- | | | |
|---------|--|-----------------------------------|
| _____a. | Piece of practice metal on which parallel beads are deposited side by side | 1. Flux |
| _____b. | Flow of electric current across a narrow gap | 2. Crater |
| _____c. | One of the many associations and societies that establish codes and/or standards for the welding industry | 3. Arc |
| _____d. | Metal rod, coated with flux, that conducts a current from electrode holder to base metal | 4. Slag |
| _____e. | Depression in face of a weld, usually at point where weld stopped | 5. American Welding Society (AWS) |
| _____f. | Weld made by one pass of electrode | 6. Arc welding |
| _____g. | Process of using an electric arc as the source of heat to join two or more pieces of metal by the fusion process | 7. Base metal |
| _____h. | Small weld used to hold base metals together temporarily | 8. Bead weld |
| _____i. | Weld between two metal parts on the same plane | 9. Penetration |
| _____j. | Extent to which weld metal combines with base metal as measured from surface of base metal | 10. Electrode |
| _____k. | Chemical coating on electrodes; used to promote fusion of metals during welding | 11. Tensile strength |
| _____l. | Nonmetallic by-product of welding process; made of flux and nonmetallic impurities | 12. Pad |
| _____m. | Maximum pull stress in pounds per square inch that a weld specimen will withstand | 13. Butt joint |
| _____n. | Metal to be welded | 14. Tack weld |

TEST

2. Match to their correct descriptions kinds of arc welding machines. Write the correct numbers in the blanks.

- | | | |
|---------|---|---------------------------------------|
| _____a. | Machine that may use either AC or DC current; uses an inert shielding gas and a non-consumable tungsten electrode | 1. Tungsten inert gas (TIG) |
| _____b. | Machine in which the electric current flows in one direction | 2. Direct current (DC) |
| _____c. | Machine that is capable of supplying AC or DC current for welding | 3. Metal inert gas (MIG) |
| _____d. | Machine that alternates direction of flow of electric current 120 times per second | 4. Alternating/direct current (AC/DC) |
| _____e. | Machine that may use AC or DC current; uses an inert shielding gas and a consumable wire electrode that is fed automatically from a spool | 5. Alternating current (AC) |

3. Select from the following list common pieces of equipment used in arc welding. Write an "X" in the blank before each correct answer.

- _____a. Hoses
- _____b. Welding machine
- _____c. Electrode holder with lead
- _____d. Crescent wrench
- _____e. Ground clamp with lead
- _____f. Helmet
- _____g. Leather gloves
- _____h. Powdered flux
- _____i. Chipping hammer
- _____j. Eye protection
- _____k. Wire brush
- _____l. Electrodes

TEST

4. List three types of electrodes.

a. _____
 b. _____
 c. _____

5. Select from the following list the most common sizes of electrodes used in arc welding. Write an "X" in the blank before each correct answer.

____ a. $\frac{3}{32}$ inch
 ____ b. $\frac{1}{8}$ inch
 ____ c. $\frac{5}{16}$ inch
 ____ d. $\frac{3}{32}$ inch
 ____ e. $\frac{3}{8}$ inch

6. Identify characters in the AWS electrode classification system. Write the correct characters in the blanks.

Letter E
First two numerals

Third numeral
Fourth numeral

- a. _____ — Indicates position to be used
 b. _____ — Denotes that electrode is for electric arc welding
 c. _____ — Gives code for special characteristics of electrode
 d. _____ — Indicate tensile strength in thousands of pounds per square inch

7. List four purposes of flux.

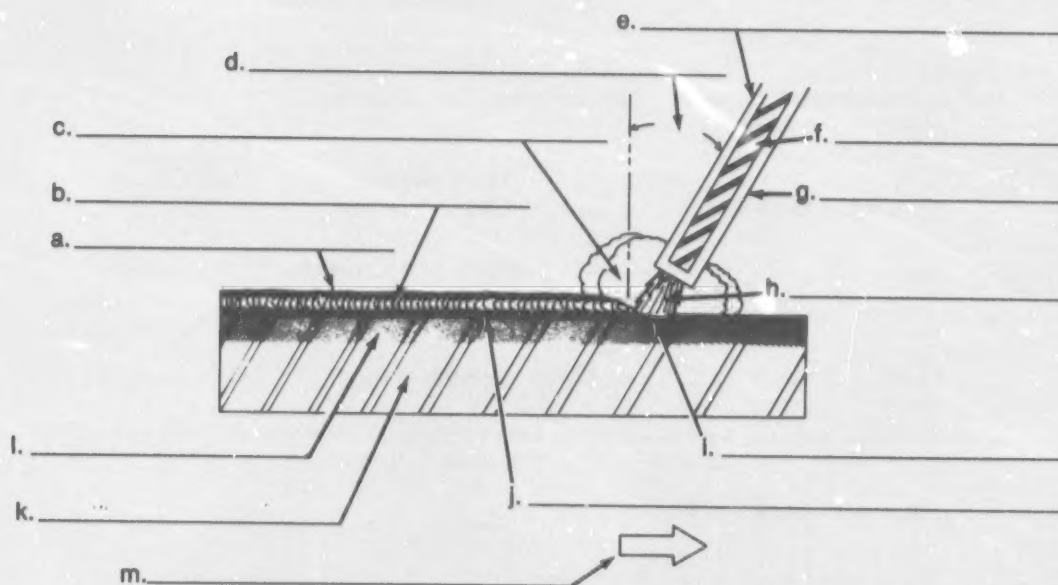
a. _____
 b. _____
 c. _____
 d. _____

8. List methods of establishing an arc.

a. _____
 b. _____

TEST

9. Select from the following list characteristics of proper arc length. Write an "X" in the blank before each correct answer.
- ____ a. End of electrode is same distance from base metal as diameter of electrode
 - ____ b. Steady hum from welding machine and a "frying" sound at arc
 - ____ c. Flame tip is $\frac{1}{8}$ inch above crater of weld on base metal
 - ____ d. Burned end of flux maintains a constant distance from base metal at all times
10. Label the parts of the welding process illustrated below. Write the correct names in the blanks.



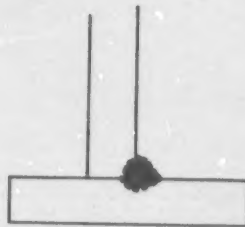
TEST

11. List welding positions.

- a. _____
- b. _____
- c. _____
- d. _____

12. Identify the following kinds of welds. Write the correct names in the blanks.

Fillet
Groove
Bead

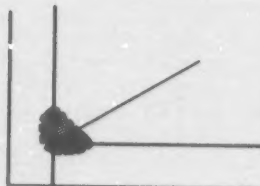
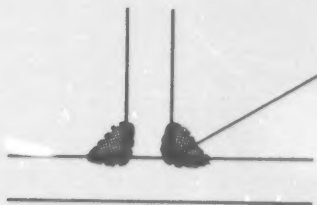


- a. _____ d. _____ c. _____

13. Identify types of weld joints. Write the correct names in the blanks.

Edge
Butt
T

Corner
Lap



- a. _____ b. _____ c. _____

TEST



d. _____ e. _____

14. Describe the effects of raising and lowering the current setting on arc welding machines.

a. Raising current — _____

b. Lowering current — _____

15. State four causes of poor welds.

a. _____

b. _____

c. _____

d. _____

16. State eight safety precautions used in arc welding.

a. _____

b. _____

c. _____

d. _____

e. _____

f. _____

g. _____

h. _____

TEST

(NOTE: Test question 17 lists the job sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

17. Demonstrate the ability to
 - a. Start, stop, and run a bead.
 - b. Construct a pad.
 - c. Construct a butt weld.

ARC WELDING
UNIT II

ANSWERS TO TEST

- | | | | | |
|----|----|----|----|----|
| 1. | a. | 12 | h. | 14 |
| | b. | 3 | i. | 13 |
| | c. | 5 | j. | 9 |
| | d. | 10 | k. | 1 |
| | e. | 2 | l. | 4 |
| | f. | 8 | m. | 11 |
| | g. | 6 | n. | 7 |
- 2.
- | | |
|----|---|
| a. | 1 |
| b. | 2 |
| c. | 4 |
| d. | 5 |
| e. | 3 |
3. b, c, e, f, g, i, j, k, l
4. Answer should include any three of the following
- | | |
|----|------------------------|
| a. | Mild steel |
| b. | High-carbon steel |
| c. | Hard-surfacing |
| d. | Alloys/special-purpose |
5. a, b, d

ANSWERS TO TEST

6.
 - a. Third numeral
 - b. Letter E
 - c. Fourth numeral
 - d. First two numerals
7. Answer should include any four of the following
 - a. Stabilizing arc
 - b. Shielding molten puddle from air
 - c. Floating impurities out of puddle
 - d. Forming slag, which slows cooling
 - e. Increasing speed
8.
 - a. Scratching (similar to striking a match)
 - b. Tapping
9. a, b
10.
 - a. Slag
 - b. Weld
 - c. Gaseous shield
 - d. 15° to 30° angle
 - e. Electrode
 - f. Wire core
 - g. Flux
 - h. Arc
 - i. Crater
 - j. Penetration

ANSWERS TO TEST

- k. Base metal
 - l. Heat lines
 - m. Direction of travel
11.
 - a. Flat
 - b. Vertical
 - c. Overhead
 - d. Horizontal
12.
 - a. Groove
 - b. Fillet
 - c. Bead
13.
 - a. T
 - b. Corner
 - c. Butt
 - d. Lap
 - e. Edge
14. Description should include the following
- a. Raising current — Produces more heat
 - b. Lowering current — Produces less heat
15. Answer should include any four of the following
- a. Machine adjustment too hot or too cold
 - b. Electrode size too large or too small
 - c. Improper movement of electrode

ANSWERS TO TEST

- d. Improper angle of electrode
 - e. Improper base metal preparation
 - f. Arc length too long or too short
 - g. Improper speed of travel
16. Answer should include any eight of the following
- a. Always look away from arc with naked eye
 - b. Use a helmet that is in good condition
 - c. Wear suitable clothing to protect all parts of the body
 - d. Yell "cover" before striking an arc
 - e. Clear welding area of all combustible or flammable materials
 - f. Avoid picking up hot metal with hands or leather gloves; use pliers
 - g. Weld only in places with good ventilation
 - h. Always open main switch or unplug machine when checking or working on welding machine
 - i. Do not leave electrode holder on welding table or in direct contact with grounded metal
 - j. Be sure that welding cables are not frayed or missing insulation
 - k. Stand on dry footing when welding
 - l. Keep welding area clean and free of tools and metals that might cause stumbling or tripping
 - m. Know and follow local school procedures when dealing with eye injuries or burns
17. Performance skills evaluated to the satisfaction of the instructor

**METALWORK
UNIT III****UNIT OBJECTIVE**

After completing this unit, the student should be able to identify metalworking tools and fasteners, cut cold metal, and select and use taps and dies. The student will show this knowledge by completing the assignment sheet, job sheets, and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with metalwork.
2. Label with their appropriate names and specific uses common hand tools used to cut or mark metal.
3. Label with their appropriate names and specific uses common hand tools used to measure or size metal.
4. List the common thread classifications.
5. Label common types of taps with their appropriate names and uses.
6. Identify components of a thread-size classification.
7. List the steps for using a tap drill chart to determine correct tap drill size.
8. Select from a list reasons for tap failure.
9. Identify common head types for threaded fasteners.
10. Label common types of metal fasteners with their appropriate names and uses.
11. Identify common grade markings for steel bolts.
12. Label common types of washers.
13. Label common types of nuts.
14. List the advantages of riveting with a pop riveter.
15. Use a tap drill chart.

OBJECTIVE SHEET

16. Demonstrate the ability to
- a. Use a hand hacksaw.
 - b. Hand tap a hole in a piece of steel.
 - c. Cut with a hand-threading die the threads on a piece of rod.
 - d. Use a pop riveter.

METALWORK
UNIT III

SUGGESTED ACTIVITIES

- I. Unit contents
 - A. Objective sheet
 - B. Suggested activities
 - C. Transparency masters
 - 1. TM #1 — Types of Taps
 - 2. TM #2 — Components of a Thread-Size Classification
 - 3. TM #3 — Types of Washers
 - 4. TM #4 — Types of Nuts
 - D. Information sheet
 - E. Assignment Sheet #1 — Use a Tap Drill Chart
 - F. Answers to assignment sheet
 - G. Job sheets
 - 1. Job Sheet #1 — Use a Hand Hacksaw
 - 2. Job Sheet #2 — Hand Tap a Hole in a Piece of Steel
 - 3. Job Sheet #3 — Cut with a Hand-Threading Die the Threads on a Piece of Rod
 - 4. Job Sheet #4 — Use a Pop Riveter
 - H. Test
 - I. Answers to test
- II. Instructor's guide
 - A. Order or obtain materials to supplement unit.
 - 1. Bolt- and screw-size charts, a tap-drill-size chart, and samples of the various types of fasteners in the unit

(NOTE: Charts and samples should be available in a well-equipped hardware store or lumberyard. If you explain that materials are going to be used for instruction, the company may provide them without a charge.)

SUGGESTED ACTIVITIES

2. Consumable metal needed for the job sheets
3. Cutting oil in an oil can
4. Good selection of sharp twist drills
5. Tools and equipment needed for this unit if not already a part of your shop inventory

EXAMPLES: Screw plate set, pop riveter and rivets, screw extractor

6. Bolt samples with different head markings
- B. Attach the various types of fasteners to a piece of pegboard to display the items for the students. Be sure to label all samples. A tape tool can be used to spell out the name and size of each item.
- C. One week before starting this unit, have students begin making lists of examples of how metal is fastened other than by welding.

(NOTE: Have students turn in lists for possible bonus points on the unit test.)

- D. Make or obtain transparencies.

(NOTE: Transparencies are available from the Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)

- E. Introduce unit by emphasizing to students the need for metal fasteners in the agricultural industry, and the many ways that metal is fastened in the industry.

SUGGESTIONS:

- Point out that modern agriculture involves a wide variety of machinery and equipment, most of which is made up of metal components.
 - Explain that in production agriculture or agribusiness, one must be able to repair, maintain, and adjust modern equipment.
- F. Provide students with objective sheet.

SUGGESTED ACTIVITIES

- G. Introduce unit and specific objectives.

SUGGESTIONS:

- After discussing the unit objective, have the students share lists and record on the chalkboard the variety of ways that metal is fastened.
- Explain to the students that through the specific objectives, they will gain new information and skills related to metalwork in agriculture.

- H. Provide students with information, assignment, and job sheets.

- I. Discuss information and assignment sheets.

1. Emphasize the importance of learning and using the correct metalwork terminology. Use Information Sheet, Section I.

SUGGESTIONS:

- Have actual examples to show students for as many of the terms as possible as the term is discussed.
 - Make a special effort to have a chisel with a mushroomed head and a chisel with the correct type of head.
 - Show properly and improperly chamfered rods.
 - Illustrate terms C, F, G, and H with a screw plate set.
2. Use Information Sheet, Section II and actual tools when discussing uses of hand tools used to cut or mark metal.

SUGGESTIONS:

- Emphasize the safety aspects of each of the tools.
 - Point out that tools are expensive, and discuss the costs associated with damage or breakage caused by incorrect use.
3. Use Section III of the Information Sheet and actual tools to discuss uses of common hand tools used to measure or size metal.

SUGGESTIONS:

- Allow students to demonstrate or discuss with the rest of the class any tools that they may be familiar with.
- Set up circumstances so that the use of each tool can be demonstrated in the classroom.

SUGGESTED ACTIVITIES

4. Discuss the most common thread classifications. Use Information Sheet, Section IV.

SUGGESTIONS:

- Have available bolts of the same sizes but with different types of threads.
- Allow students to try to screw a national fine (NF) nut onto a national coarse (NC) bolt.
- Emphasize to students that other classifications of threads exist, and that metric threads are increasing in popularity.

5. Use Information Sheet, Section V and Transparency #1 to illustrate the types of taps and their uses.

SUGGESTIONS:

- Have actual taps available; allow students to inspect them closely to differentiate among the different tapers on the taps.
 - Elaborate on the uses of the various taps to ensure that the student understands their intended uses.
6. Use Information Sheet, Section VI and Transparency #2 to discuss the components of a thread-size classification.

SUGGESTIONS:

- Have available taps and dies of different sizes.
 - Show how a tap easily screws into a die of the same thread classification.
 - Use the screw-pitch gauge, shown earlier in the unit, to illustrate on a tap or a die how the screw-pitch gauge fits into the thread-size classification system.
7. Discuss steps for using a tap drill chart to determine tap drill size. Use Information Sheet, Section VII and Assignment Sheet #1.

SUGGESTIONS:

- Use a tap drill chart in addition to the one in the information sheet to illustrate tap drill size selection.
- Allow students to practice interpreting the chart by completing Assignment Sheet #1.
- Create additional problems for students to work if more practice is needed.

SUGGESTED ACTIVITIES

8. Use information Sheet, Section VIII to discuss reasons for tap failure.

SUGGESTIONS:

- Illustrate in the shop the reasons for tap failure outlined in Section VIII.
- Demonstrate proper procedures for backing up the tap to break the chip.

9. Discuss head types and uses for metal fasteners, grade markings for bolts, types of washers, and types of nuts. Use Information Sheet, Sections IX through XIII and Transparencies #3 and #4.

SUGGESTIONS:

- Use the prepared pegboard samples.
 - Invite a resource person from a hardware store or lumberyard to discuss this information. Provide the resource person with a copy of Sections IX through XIII.
 - Review the lists prepared by the students as to the variety of ways metal is fastened.
 - Ask students to discuss unusual applications of fasteners that they may not have realized before studying this unit.
10. Discuss advantages of riveting with a pop riveter. Use Information Sheet, Section XIV and Job Sheet #4.

SUGGESTIONS:

- Discuss examples of pop riveting uses in agricultural equipment, especially in sheet metal applications.
- Remind students that the trim on stock trailers and horse trailers is held on with pop rivets.
- Have students look for other instances at home where pop rivets may be used, especially instances they may not have been aware of previously.

- J. Discuss and demonstrate job sheets. Have students do Job Sheets #1-#4.

(NOTE: Allow students ample time to practice the job sheet skills to improve their proficiency.)

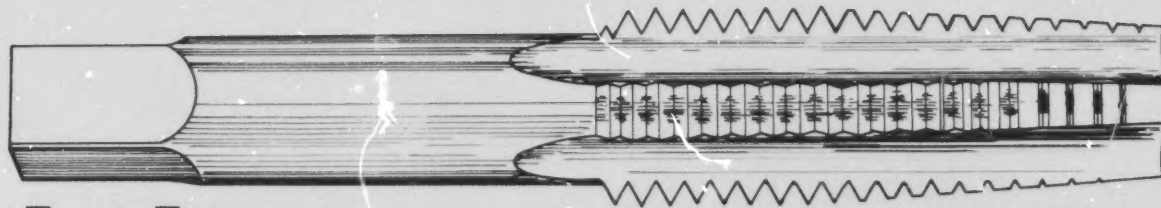
- K. Give test.

SUGGESTED ACTIVITIES

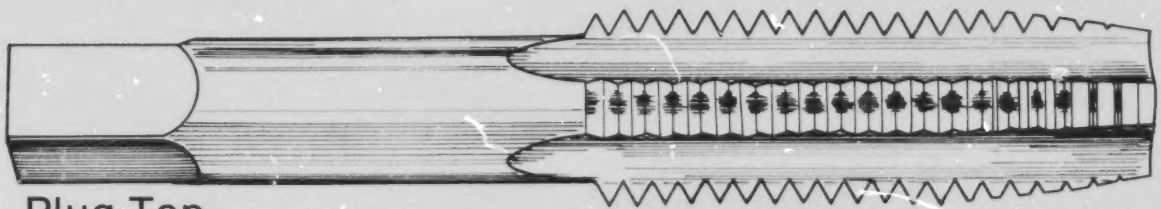
III. Unit references

- A. Braker, Clifton R. "Pete." *Vocational Agriculture I*, rev. ed. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1974.
- B. Dunn, James. *Machine Shop: Volume 1*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1981.
- C. Feirer, John L., and John R. Lindbeck. *Metalwork: S I Metric Edition*, Charles A. Bennett Co., Inc., Peoria, Illinois, 1979.
- D. Hendrix, Laborn J. "Bud." *Millwright*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1980.
- E. *PROTO Professional Tools*. Ingersoll-Rand Company, 1980.
- F. Shinn, Glenn C. and Curtis R. Weston. *Working in Agricultural Mechanics*. New York: McGraw-Hill, Inc., 1978.

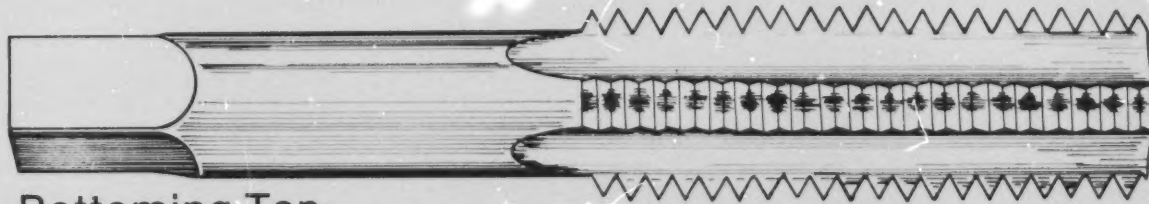
Types of Taps



Taper Tap

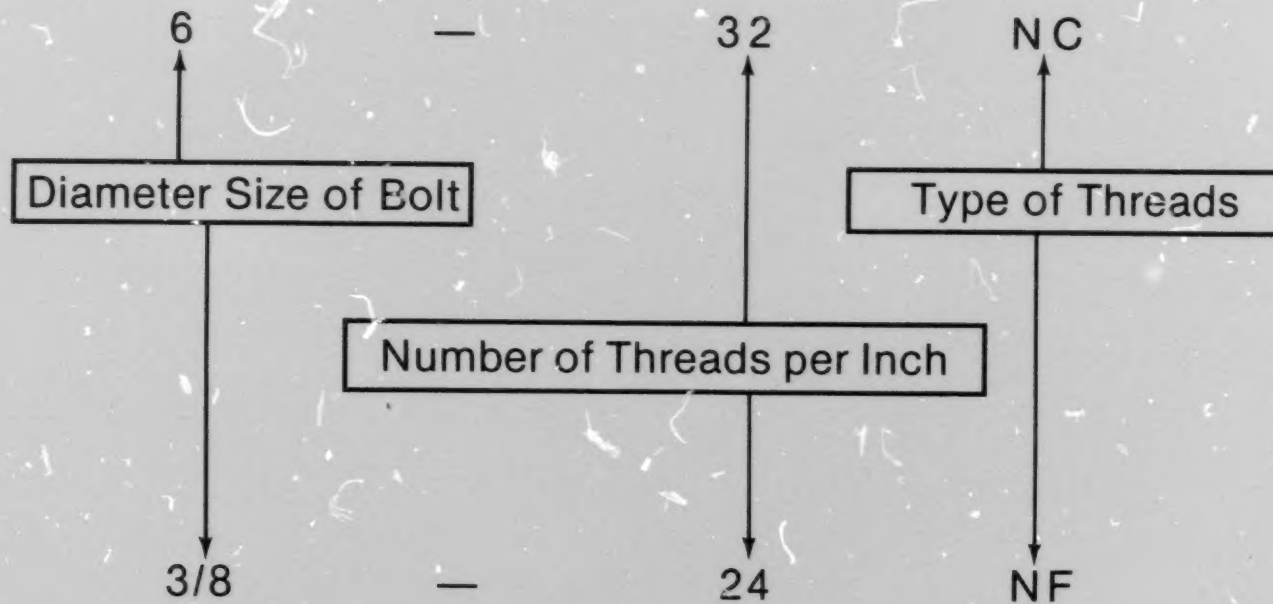


Plug Tap



Bottoming Tap

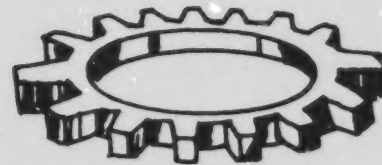
Components of a Thread-Size Classification



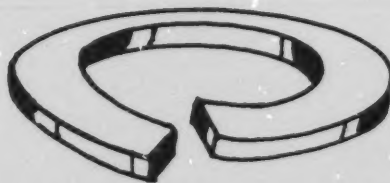
Types of Washers



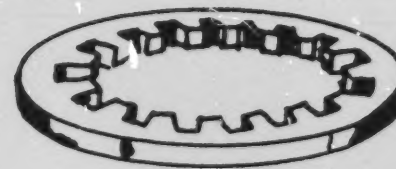
Plain Flat Washer



Lock Washer
(External)



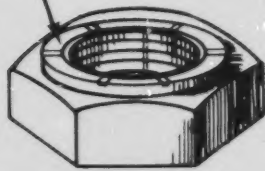
Common
Lock Washer



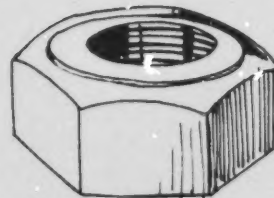
Lock Washer
(Internal)

Types of Nuts

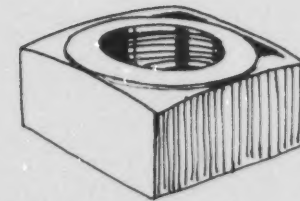
Nylon Insert



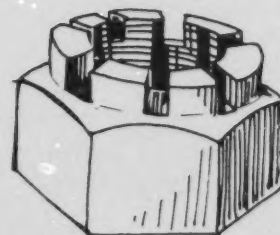
Self-Locking



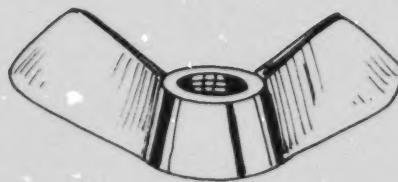
Hexagon



Square



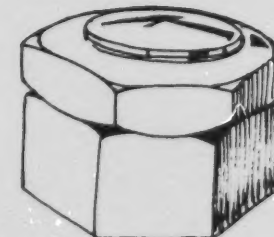
Castle



Wing



Acorn or Cap



Jam or Lock

METALWORK
UNIT III

INFORMATION SHEET

I. Terms and definitions

- A. **Mushroom** — Enlarged area on head of a chisel; caused by striking chisel with a hammer
- B. **Tang** — Pointed end of a file
- C. **Screw plate set** — Equipment consisting of taps, dies, and handles; used for making or reconditioning threads
- D. **Chamfer** — Angled surface (Figure 1)

(NOTE: A chamfer is usually filed on round stock to ease the start of cutting threads with a thread die.)

EXAMPLE:

FIGURE 1



- E. **Burr** — Sharp edge left on metal from some type of cutting or machining operation

(NOTE: Common shop injuries are cuts from burrs on metal.)

- F. **Tap drill size** — Size of hole drilled for a specific tap size before cutting threads with tap
- G. **Threading die** — Tool used to produce external threads
- H. **Tap** — Tool used to produce internal threads

INFORMATION SHEET

II. Specific uses of common hand tools used to cut or mark metal (Figures 2-16)

- A. Metal snips — Used to cut thin sheet metal, shim stock, or band-saw blade material to size or shape

FIGURE 2



- B. Hand hacksaw — Used to saw metal parts to size or shape by hand

FIGURE 3



- C. Tap — Used to produce internal threads in a hole that has been drilled to a specific size or to recondition damaged threads

(NOTE: Taps have different shaped points and numbers of flutes [rows of cutting teeth], depending on their application. Taper, plug, and bottoming taps are the most common types; taps are also available in metric sizes.)

FIGURE 4



- D. Tap wrench — Used to drive taps, hand reamers, and screw extractors of larger sizes ($\frac{3}{8}$ inch and up)

(NOTE: These tools are made for different ranges of taps and should be used with the correct tap size.)

FIGURE 5



INFORMATION SHEET

- E. Adjustable threading die — Used to produce external threads by hand on stock of a particular size; mounted in a die stock that holds and turns threading die; also used to recondition damaged threads

(NOTE: One side of this die has a taper, which is placed on the part to be threaded. Dies are also available in metric sizes.)

FIGURE 6



- F. Die stock — Used to hold round threading dies when cutting threads by hand

FIGURE 7



- G. Cold chisel — Used to chip flat surfaces and to cut thin sheet metal

(NOTE: *Cape*, *roundnose*, and *diamond-point* are the names of chisels with other shapes; these are used to cut grooves, keyways, and small slots.)

FIGURE 8



INFORMATION SHEET

(NOTE: Never use a chisel with a mushroomed head because the mushroom can chip off and cause injury; grind the head smooth. See Figure 9.)

EXAMPLE:

FIGURE 9



- H. Center punch — Used to mark the location of a hole prior to drilling by making a dent in the surface of the material

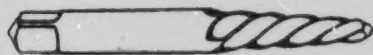
FIGURE 10



- I. Screw extractor (easy-out) — Used to remove bolts and screws whose heads have been broken off or damaged

(NOTE: Screw extractors are available in a variety of sizes. Some larger sizes can be used to remove broken pipe.)

FIGURE 11



- J. File — Used to smooth, shape, or remove sharp edges from material in metalwork

(NOTE: Files are available in a variety of arrangements of tooth sizes and file shapes. Some of the more commonly used shapes are flat, round, half-round, and triangular.)

FIGURE 12



INFORMATION SHEET

(NOTE: Never use a file unless it is equipped with a handle to prevent possible stab wounds from the spearlike point [tang]. See Figure 13.)

EXAMPLE:

FIGURE 13



- K. File card — Used to clean a file

(NOTE: Some file cards have short wire bristles on one side for cleaning hard, embedded particles from a file, and a brush on the other side to finish cleaning.)

FIGURE 14



- L. Twist drill (drill bit) — Used to drill holes in metal with either a power hand drill motor (electric or air) or a drill press

(NOTE: Twist drills come in a variety of types, such as the straight shank shown as well as taper.)

FIGURE 15

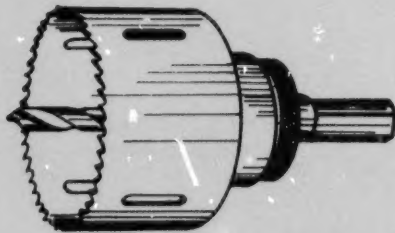


INFORMATION SHEET

- M. Hole saw — Used to cut holes in metal when a hole larger than that made by available twist drills is needed

(NOTE: Hole saws may be bought in a variety of sizes for both wood and metal. If saws are bought for metal, they can also be used for wood; however, the opposite is not true. Hole saws are equipped with a twist drill to form the pilot hole and are designed to be used in a power hand drill or drill press.)

FIGURE 16

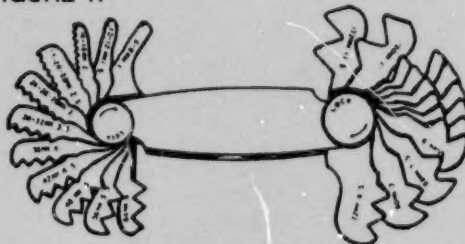


III. Specific uses of common hand tools used to measure or size metal (Figures 17-28)

- A. Screw-pitch gauge — Used to determine pitch, size, and number of various threads

(NOTE: Screw-pitch gauges are available for both customary and metric threads.)

FIGURE 17



INFORMATION SHEET

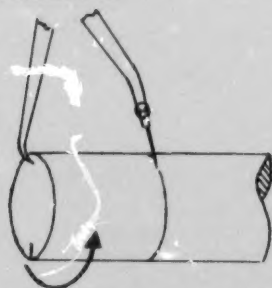
- B. Firm-joint hermaphrodite caliper — Used to lay out plans from a reference surface; must be set with a scale

FIGURE 18



EXAMPLES:

FIGURE 19



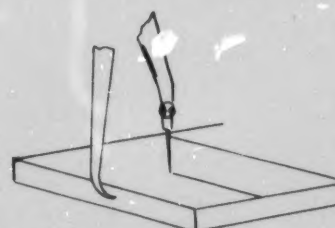
Marking Lines on Round Surface

FIGURE 20



Locating Centers

FIGURE 21

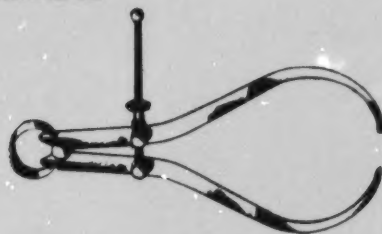


Locating Lines

- C. Outside caliper — Used to measure outside diameters

(NOTE: Measurements are transferred to a steel rule or other measuring tool for reading the size. Both inside and outside calipers may be preset to determine when a diameter is getting close to size.)

FIGURE 22



INFORMATION SHEET

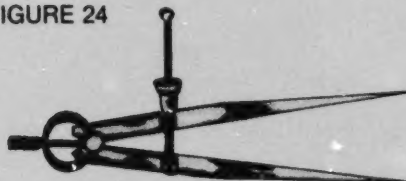
- D. Inside caliper — Used to measure inside diameters and widths of slots

FIGURE 23



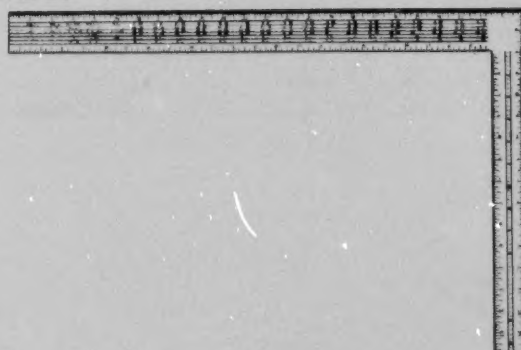
- E. Divider — Used to lay out circles and arcs, to measure distance between points, and to transfer a measurement directly from a steel rule

FIGURE 24



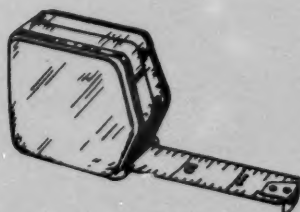
- F. Framing square — Used to provide a straight edge, to measure, and to square

FIGURE 25



- G. Steel tape — Used to measure lengths

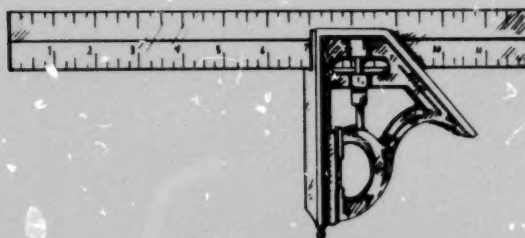
FIGURE 26



INFORMATION SHEET

- H. Combination square — Used to provide a straight edge, to level, to measure, and to square

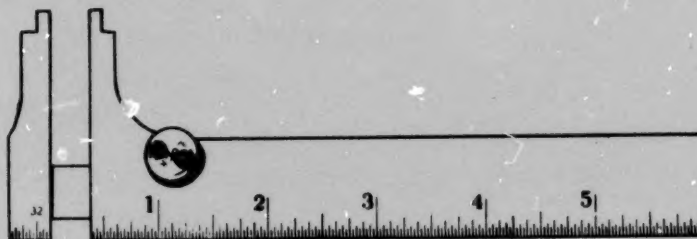
FIGURE 27



- I. Pocket slide caliper — Used to make accurate outside and inside measurements

(NOTE: Many other types of precision calipers and measuring devices are available, but these are primarily designed for precision machinist work.)

FIGURE 28



IV. Common thread classifications (See Figures 29 and 30)

- A. National coarse (NC)

INFORMATION SHEET

B. National fine (NF)

(NOTE: Numerous other thread classifications exist, and threads come in metric sizes.)

EXAMPLE: National fine and national coarse compared

FIGURE 29

National Fine

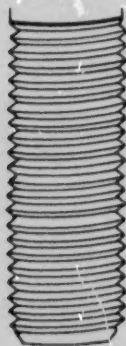
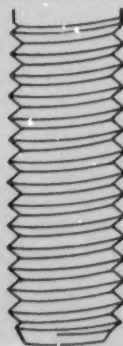


FIGURE 30

National Coarse

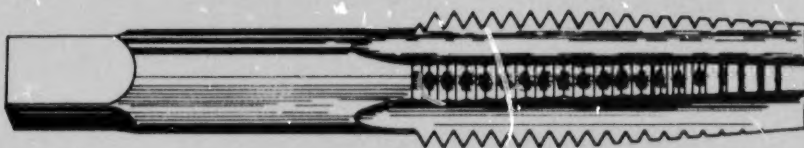


V. Types of taps and their uses (Figures 31-33)

(NOTE: Prior to cutting threads with a tap, drill a pilot hole, using a specific tap drill size determined by the major diameter of the bolt.)

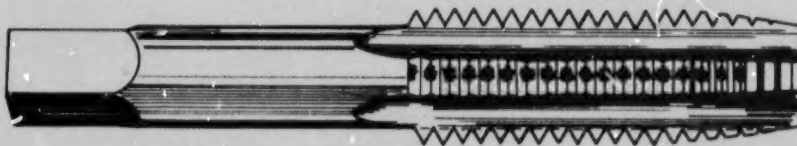
- A. Taper tap — Used to make threads in a hole that goes all the way through a piece of metal

FIGURE 31



- B. Plug tap — Used after a taper tap to cut threads to bottom of a closed hole

FIGURE 32



INFORMATION SHEET

- C. Bottoming tap — Used after taper and plug taps, respectively, to complete threads in bottom of a closed hole

FIGURE 33



VI. Components of a thread-size classification

(NOTE: All taps and dies have thread-size classifications stamped on them.)

- A. First number — Indicates diameter of bolt
EXAMPLE: 6 — 32NC
- B. Number immediately before letters — Indicates number of threads per inch
EXAMPLE: 6 — 32NC
- C. Letters — Indicate type of threads
EXAMPLE: 6 — 32NC

VII. Steps for using a tap drill chart to determine tap drill size

(NOTE: Tap drills are sized by numbers, fractions, letters, or decimal equivalents. It is very important that you determine and use the correct tap drill size. If you drill too large a hole, the thread will be shallow and, therefore, very weak. If the hole is drilled too small, you will probably break the tap.)

INFORMATION SHEET

- A. Locate thread designation (size and thread) on chart (Table 1)

EXAMPLE:

TABLE 1

COMMON CUSTOMARY THREADS
WITH TAP DRILL SIZES

National Fine		National Coarse	
Size and Thread	Tap Drill	Size and Thread	Tap Drill
4 - 48	#42 (0.094)	4 - 40	#43 (0.089)
5 - 44	37 (0.104)	5 - 40	38 (0.102)
6 - 40	33 (0.113)	6 - 32	36 (0.107)
8 - 36	29 (0.136)	8 - 32	29 (0.136)
10 - 32	21 (0.159)	10 - 24	25 (0.150)
1/4 - 28	3 (0.213)	1/4 - 20	7 (0.201)
5/16 - 24	"I" (0.272)	5/16 - 18	"F" (0.257)
3/8 - 24	"Q" (0.332)	3/8 - 16	5/16 (0.313)
7/16 - 20	25/64 (0.391)	7/16 - 14	"U" (0.368)
1/2 - 20	29/64 (0.453)	1/2 - 13	27/64 (0.422)

- B. Move to right on chart to locate corresponding tap drill size
- C. If number or letter drills are not available, use the tap drill having the closest decimal equivalent to the number or letter drill required

EXAMPLE: You determine that you need a tap drill size 3 (0.213), but the number 3 drill is broken. Find on the chart the decimal closest to 0.213. You would use tap drill size 7 (0.201).

VIII. Reasons for tap failure

(NOTE: Taps come in a variety of shapes and numbers of rows of flutes, making correct tap selection very important.)

- A. Hole drilled too small

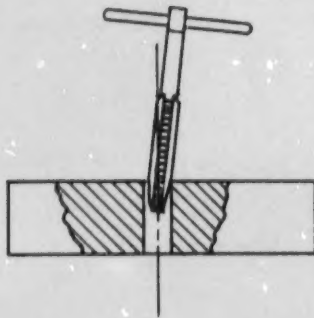
INFORMATION SHEET

- B. Tap not straight with hole (Figure 34)

(NOTE: A tap that is not straight with the hole will bind.)

EXAMPLE:

FIGURE 34



- C. Use of dull tap
 D. Not using cutting fluid
 E. Not backing up and breaking the chip
 F. Not reversing direction of tap once point has reached bottom of hole

(NOTE: The result would be chip buildup.)

- G. Use of a too-large tap wrench

(NOTE: Using a too-large tap wrench will not let you feel how much torque you are applying.)

IX. Common head types for threaded fasteners (Figures 35-40)

- A. Flat

FIGURE 35



- B. Round

FIGURE 36



INFORMATION SHEET

C. Oval

FIGURE 37



D. Pan

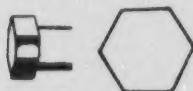
FIGURE 38



(NOTE: Many of the types of fasteners already listed can be obtained in Phillips heads as well as slotted heads.)

E. Hex

FIGURE 39



F. Square

FIGURE 40

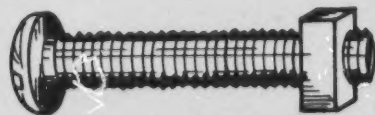


X. Uses for common types of metal fasteners (Figures 41-47)

- A. Machine screw — Used for assembling small mechanical and electrical products

(NOTE: Machine screws are available with round, flat, or oval heads, and with slotted or Phillips heads. Nuts are not furnished, although square or hexagonal nuts are available. Machine screws may have national coarse [NC] or national fine [NF] threads, with diameters of $\frac{1}{4}$ inch, $\frac{5}{16}$ inch, $\frac{3}{8}$ inch and $\frac{1}{2}$ inch. For screws under $\frac{1}{4}$ inch in diameter, the size is designated by numbers 2 through 12 and the number of threads per inch.)

FIGURE 41

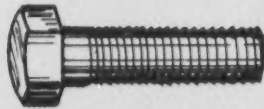


INFORMATION SHEET

- B. Cap screw — Used to hold together two pieces of machinery

(NOTE: Cap screws are made in diameters of $\frac{1}{4}$ inch to 1 inch and come in lengths from $\frac{1}{2}$ inch to 6 inches. They come in many different head styles, and they are similar to machine bolts except that they have a more accurately machined surface. Except on the smaller sizes, the thread covers only a part of their length. The screw in use is passed through an unthreaded hole in one piece and screwed into a tapped hole in the second piece.)

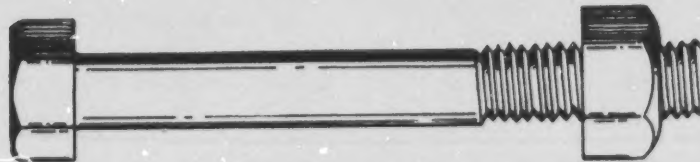
FIGURE 42



- C. Machine bolt — Used to fasten together metal parts when a protruding head (one that sticks out) is not objectionable

(NOTE: Machine bolts are made in diameters from $\frac{1}{4}$ inch to over 1 inch and in lengths from $\frac{1}{2}$ inch to over 30 inches. The bolts have either national coarse or national fine threads with square or hexagonal head shapes and nuts of the same shape.)

FIGURE 43



INFORMATION SHEET

- D. Setscrew — Used to hold together two parts to prevent one part from moving or turning

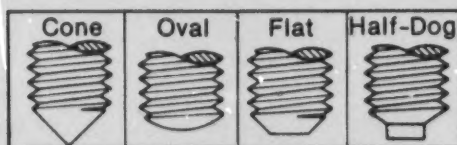
FIGURE 44



(NOTE: Setscrews may be used to hold a pulley on a shaft. They come in a variety of head and point shapes. See Figure 45.)

EXAMPLE:

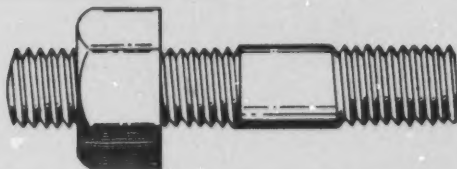
FIGURE 45



- E. Stud — Used as a headless fastener that may be screwed into a threaded hole or may have a nut screwed onto either or both ends

(NOTE: The threaded parts of a stud may have different diameters, and the unthreaded part may come in a variety of shapes and sizes.)

FIGURE 46



INFORMATION SHEET

- F. Sheet metal screw — Used to fasten together metal parts when the parts are not tapped with threads

(NOTE: Sheet metal screws come with a variety of heads and in a variety of sizes. There are basically two types of points, sharp and blunt. For those screws that require a pilot hole, the hole should be no larger than the smallest diameter of the screw.)

FIGURE 47



- XI. Common grade markings for steel bolts (Figures 48-50)

(NOTE: Listed below are the three most common grade markings for bolts. Always replace bad bolts with the same grade. The higher the grade number, the higher the carbon content and strength of the bolt. Proper bolt grade replacement ensures proper machine or equipment operation.)

A. Grade 2

B. Grade 5

C. Grade 8

FIGURE 48



FIGURE 49



FIGURE 50



- XII. Common types of washers (Figures 51-54)

(NOTE: Washers either protect metal surfaces or lock to help prevent a fastener from becoming loose.)

A. Plain flat

B. Common lock

FIGURE 51



FIGURE 52



INFORMATION SHEET

C. External lock

FIGURE 53



D. Internal lock

FIGURE 54

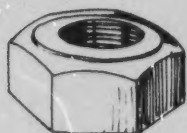


XIII. Common types of nuts (Figures 55-61)

(NOTE: Nuts may be used with any of the types of screws or bolts previously mentioned except setscrews and sheet metal screws.)

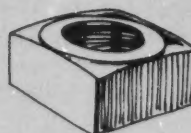
A. Hexagon

FIGURE 55



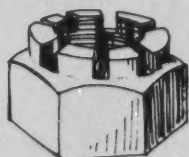
B. Square

FIGURE 56



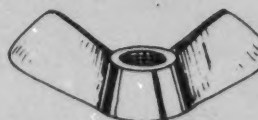
C. Castle

FIGURE 57



D. Wing

FIGURE 58



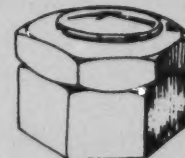
E. Acorn or cap

FIGURE 59



F. Jam or lock

FIGURE 60

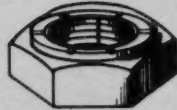


INFORMATION SHEET

G. Self-locking

(NOTE: Many types of self-locking nuts exist, the most common being the plastic-insert nut. This type contains a relatively soft collar of unthreaded material built into the head. The collar may consist of suitable fibrous material or of a plastic such as nylon.)

FIGURE 61



XIV. Advantages of riveting with a pop riveter

(NOTE: Because of the simplicity, speed of use, and low cost of pop riveting, it has become increasingly popular in a number of areas of agricultural mechanics. Both aluminum and steel rivets are available and are most commonly used for fastening thin materials.)

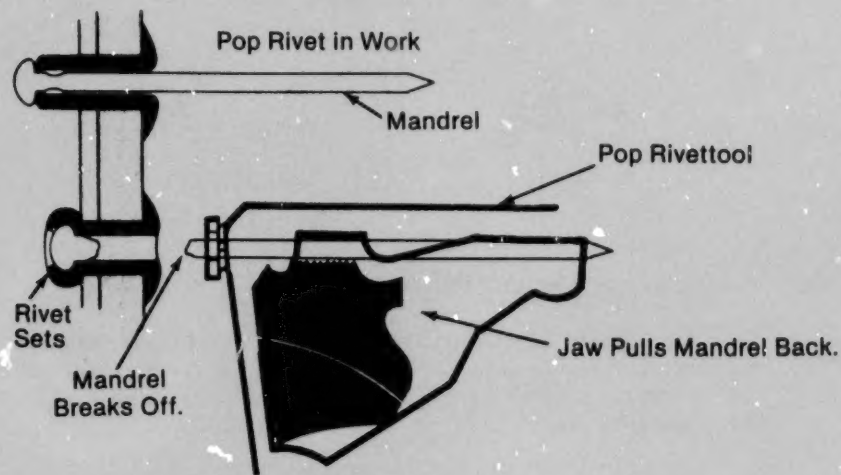
- A. Easy
- B. Fast
- C. Inexpensive
- D. Convenient in tight places
- E. Reasonably permanent and trouble-free
- F. Available in a variety of diameter sizes and lengths

INFORMATION SHEET

G. Neat finished product (Figure 62)

EXAMPLE: Pop riveting process

FIGURE 62



Used with permission of Bennett Publishing from *Metalwork: SI Metric Edition*, by John L. Felrer and John R. Lindbeck, copyright 1979.

(NOTE: The mandrel, which is inside the rivet, has a head somewhat like a nailhead. As the tool jaws pull on the shank of the mandrel, the head of the mandrel spreads the rivet, clinching the rivet and breaking the mandrel loose.)

**METALWORK
UNIT III**

ASSIGNMENT SHEET #1 — USE A TAP DRILL CHART

NAME _____

SCORE _____

Often an agricultural mechanic may need to thread metal with a tap or die or to recondition damaged threads.

Use the tap drill chart below to determine the proper tap drill size for the thread designations listed.

**COMMON CUSTOMARY THREADS
WITH TAP DRILL SIZES**

National Fine		National Coarse	
Size and Thread	Tap Drill	Size and Thread	Tap Drill
4 - 48	#42 (0.094)	4 - 40	#43 (0.089)
5 - 44	37 (0.104)	5 - 40	38 (0.102)
6 - 40	33 (0.113)	6 - 32	36 (0.107)
8 - 36	29 (0.136)	8 - 32	29 (0.136)
10 - 32	21 (0.159)	10 - 24	25 (0.150)
1/4 - 28	3 (0.213)	1/4 - 20	7 (0.201)
5/16 - 24	"I" (0.272)	5/16 - 18	"F" (0.257)
3/8 - 24	"Q" (0.332)	3/8 - 16	5/16 (0.313)
7/16 - 20	25/64 (0.391)	7/16 - 14	"U" (0.368)
1/2 - 20	29/64 (0.453)	1/2 - 13	27/64 (0.422)

Thread Designation

Tap Drill Size

Decimal Equivalent

3/8 — 16NC

A.

8 — 36NF

B.

7/16 — 14NC

C.

7/16 — 20NF

D.

3/8 — 24NF

E.

- F. Refer to Section VII in the information sheet to determine what should be done if a "U" tap drill is needed but is not available. Write your answer below.

METALWORK
UNIT III

ANSWERS TO ASSIGNMENT SHEET

Assignment Sheet #1

- A. #5/16, 0.313
- B. #29, 0.136
- C. "U", 0.368
- D. #25/64, 0.391
- E. "Q", 0.332
- F. Use the tap drill having the closest decimal equivalent to that of the "U" drill; tap drill #25/64 (0.391)

METALWORK
UNIT III

JOB SHEET #1 — USE A HAND HACKSAW

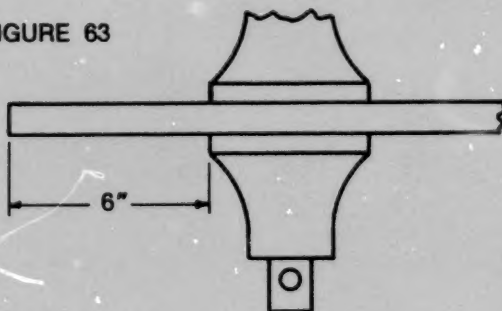
I. Equipment and materials

- A. Steel rule, 6-inch or 12-inch
- B. Bench vise with soft jaws
- C. Hand hacksaw
- D. Soapstone
- E. Flat steel strap, $\frac{3}{8}$ -inch by 2 inches
- F. File with handle
- G. Square
- H. File card

II. Procedure

- A. Clamp flat strap in bench vise so that about 6 inches extend past edge of vise (Figure 63)

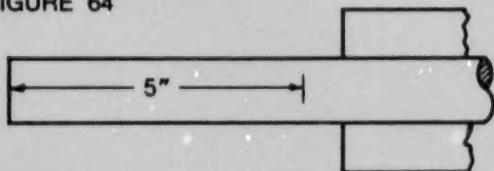
FIGURE 63



JOB SHEET #1

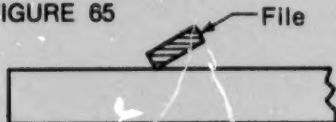
- B. Use steel rule to mark a 5-inch length with sharp soapstone (Figure 64)

FIGURE 64



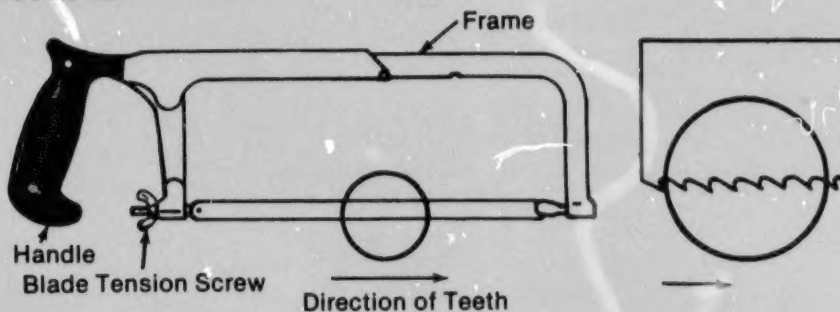
- C. Use file to make a V-groove on the 5-inch mark (Figure 65)

FIGURE 65



- D. Check hacksaw to make sure that blade is tight, teeth are sharp, and teeth are going the correct direction (Figure 66)

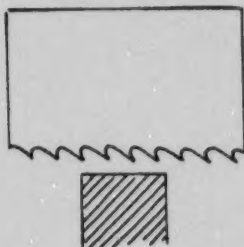
FIGURE 66



(NOTE: For most general-purpose work, use a blade that has twelve teeth per inch; however, a fine-toothed blade should be used to cut thin stock. Keep in mind the three-tooth rule—at least three teeth in contact with work—when selecting saw blades. See Figure 67.)

JOB SHEET #1

FIGURE 67



- E. Place saw blade in V-groove
- F. Hold saw firmly by the handle and front of frame
- G. Start a back-and-forth movement of the saw, applying pressure on forward strokes and lifting saw slightly on return strokes

(NOTE: Use the entire length of the blade when cutting.)

- H. Cut at an approximate rate of forty strokes per minute

(CAUTION: When the saw is about to cut through the stock, ease up on the pressure. Otherwise, you may push your hand onto the sharp edge of the stock still held in the vise.)

- I. File off burrs from cut ends
- J. Clean work area and put away equipment and materials

(NOTE: Keep filed metal strap for future use.)

**METALWORK
UNIT III****JOB SHEET #2 — HAND TAP A HOLE IN A PIECE OF STEEL****I. Equipment and materials**

- A. Bench vise
- B. Piece of steel ($\frac{3}{8}$ -inch by 2-inch flat strap from Job Sheet #1)
- C. Center punch
- D. Ball-peen hammer
- E. Hand power drill or drill press
- F. Twist drill
- G. Square
- H. Tap
- I. Tap wrench
- J. Cutting fluid
- K. Tap drill chart
- L. Bolt with same threads as hole to be tapped

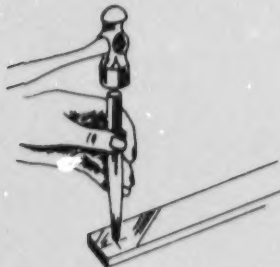
II. Procedure

- A. Determine size of thread from information given by instructor
- B. Check proper tap drill size on drill chart
- C. Mount piece of steel in vise
- D. Mark location of center of hole in middle of strap, approximately 1 inch from the end (See Figure 68)

JOB SHEET #2

- E. Use center punch to make a starting hole (Figure 68)

FIGURE 68



- F. Select proper size twist drill for hole to be tapped

(NOTE: Refer to the tap drill chart.)

- G. Insert twist drill into chuck of drill press or hand power drill and tighten

- H. Clamp material to be drilled (Figures 69 and 70)

(NOTE: Ask instructor about type of equipment and method of clamping to use.)

EXAMPLES:

FIGURE 69

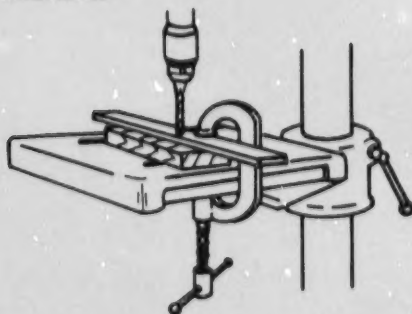
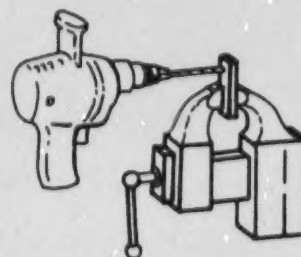


FIGURE 70



Figures 69 and 70 used with permission of McGraw-Hill, Inc., from *Working in Agricultural Mechanics*, by Glenn C. Shinn and Curtis R. Weston, copyright 1978.

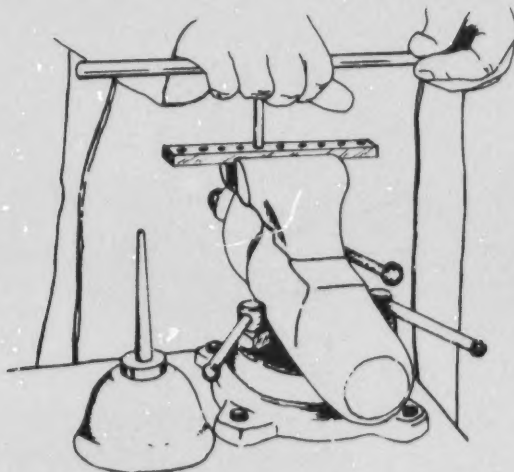
- I. Drill hole in material
- J. Tighten proper tap into tap wrench

JOB SHEET #2

- K. Cup hand over tap wrench and place tap in hole
- L. With tap parallel to hole, start turning clockwise, applying a downward pressure on tap (Figure 71)

(NOTE: Apply cutting fluid to the tap at the hole as required.)

FIGURE 71



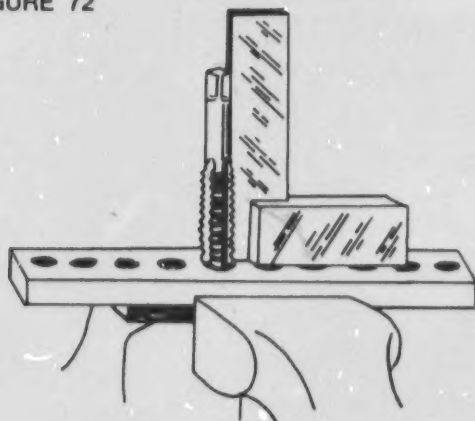
JOB SHEET #2

- M. Remove tap wrench after a few threads have been cut (Figure 72)

(NOTE: Use a small square to check for squareness. Tap should be at a 90-degree angle from the work in all positions.)

(CAUTION: If tap is not square, you will have to start over; otherwise, the tap will ruin the thread and possibly the hole.)

FIGURE 72



- N. Reset tap wrench
O. Continue turning and tapping hole

(NOTE: Reverse ordinary hand taps by one turn after about three turns [or when the tap gets hard to turn] to break the chips. This will remove the chips and prevent damage to the threads and/or the tap. When tapping a blind hole, occasionally remove the tap and clean out the hole.)

- P. Clean chips from hole
Q. Check thread with a bolt of correct dimensions
R. Clean work area and put away equipment and materials

(NOTE: Keep the strap with tapped hole for future use.)

METALWORK
UNIT III

JOB SHEET #3 — CUT WITH A HAND-THREADING DIE THE THREADS
ON A PIECE OF ROD

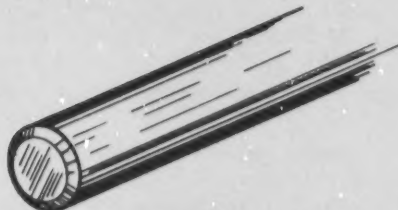
I. Equipment and materials

- A. Bench vise
- B. 4-inch steel rod of correct size to thread and screw into the tapped hole made in Job Sheet #2
- C. Bench grinder or file
- D. Die
- E. Die stock (wrench)
- F. Thread gauge
- G. Cutting fluid

II. Procedure

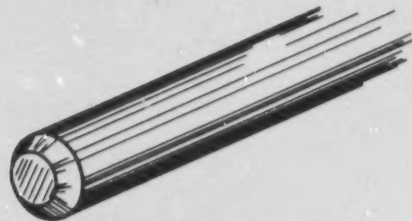
- A. Determine size of thread needed to match tapped hole completed in Job Sheet #2
- B. Use grinder or file to chamfer end of steel rod (Figures 73 and 74)

FIGURE 73



Correct

FIGURE 74



Incorrect—Too Sharp

- C. Mount rod in vise
- D. Select proper die and die stock
- E. Adjust die for proper depth of cut

(NOTE: Depth of cut may be adjusted for a snug or free fit. Adjustment is made with setscrews in the die or holder.)

JOB SHEET #3

- F. Place die in stock and tighten
- G. Cup hand over die and place it on top of rod
- H. Turn die clockwise while applying downward pressure (Figure 75)

FIGURE 75



- I. After cutting several threads, move your hands to the ends of the die stock handles.

(NOTE: Be sure that die is maintained square with work. If die is out of square, this is called a drunken thread.)

- J. Apply cutting fluid to the die as required
- K. Continue cutting threads until you have threaded 1 inch of the rod

(NOTE: After approximately three turns with an ordinary hand thread die, reverse the die about one-half turn. This procedure will break the chips, remove the chips, and prevent damage to the threads and the die.)

- L. Clean chips from threads
- M. Check thread by screwing the rod into the tapped hole in the strap
- N. Clean work area and put away equipment and materials

(NOTE: Turn in the completed pieces to the instructor for evaluation.)

METALWORK
UNIT III

JOB SHEET #4 — USE A POP RIVETER

I. Equipment and materials

- A. Pop riveter
- B. Pop rivets
- C. Two sheet metal strips, approximately 2" x 6" x 1/16"

(NOTE: Sheet metal strips should be predrilled with matching hole locations and correct hole sizes to match size of pop rivets being used.)

II. Procedure

- A. Place metal strips in vise so that all edges are even and holes are matched
- B. Insert pop rivet mandrel fully into pilot hole on face of pop riveter
- C. Insert rivet fully into matching holes in metal strips
- D. Maintain pressure of rivet against metal strips while repeatedly closing and opening riveter handles

(NOTE: Repeatedly closing and opening the handles allows the jaws of the riveter to pull the mandrel. This causes the rivet to mushroom on the opposite side of the metal strips.)

- E. Continue riveter handle action until mandrel breaks off
- F. Repeat riveting process on other set of matching holes in metal strips

(NOTE: When this process is completed, the metal strips will be fastened together with two rivets.)

- G. Clean work area and put away equipment and materials

(NOTE: Turn in the riveted strips to your instructor for evaluation.)

METALWORK UNIT III

TEST

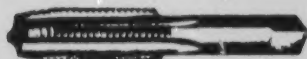
NAME _____

SCORE _____

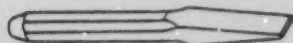
1. Match to their correct definitions terms associated with metalwork. Write the correct numbers in the blanks.

- | | | |
|----------|--|--------------------|
| _____ a. | Sharp edge left on metal from some type of cutting or machining operation | 1. Screw plate set |
| _____ b. | Tool used to produce internal threads | 2. Tap drill size |
| _____ c. | Equipment consisting of taps, dies, and handles; used for making or reconditioning threads | 3. Burr |
| _____ d. | Tool used to produce external threads | 4. Mushroom |
| _____ e. | Enlarged area on head of a chisel; caused by striking chisel with a hammer | 5. Tap |
| _____ f. | Size of a hole drilled for a specific tap size before cutting threads with tap | 6. Chamfer |
| _____ g. | Angled surface | 7. Tang |
| _____ h. | Pointed end of a file | 8. Threading die |

2. Label with their appropriate names and specific uses common hand tools used to cut or mark metal.

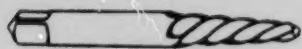


a.



b.

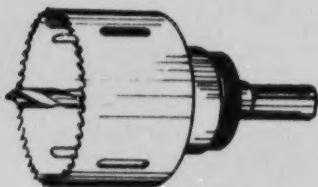
TEST



c.



d.



e.



f.

TEST



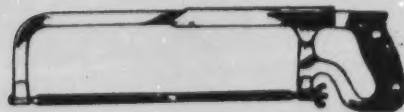
g.



h.



i.



j.

TEST



k.



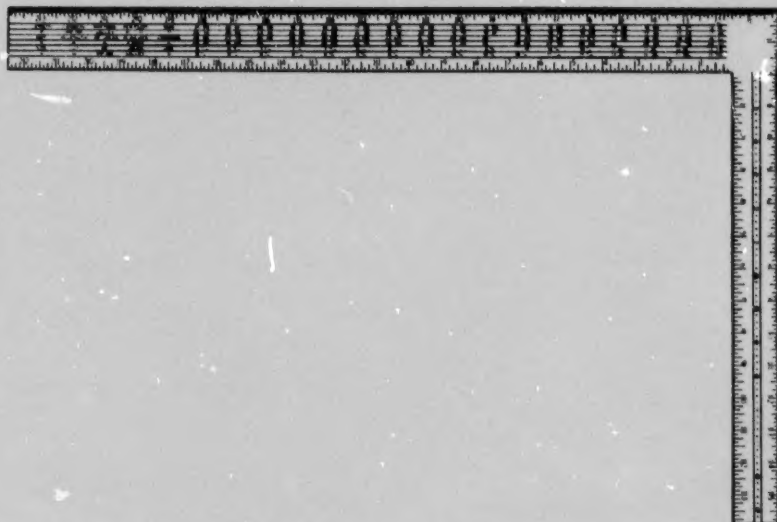
l.



m.

TEST

3. Label with their appropriate names and specific uses common hand tools used to measure or size metal.



a.

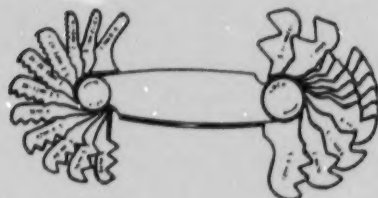


b.

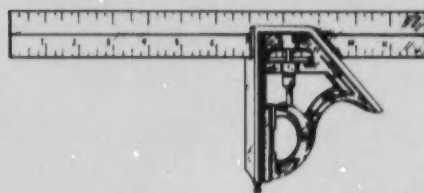
TEST



c. _____

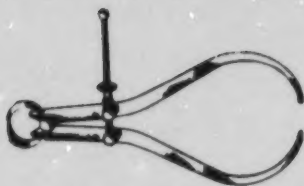


d. _____



e. _____

TEST



f. _____

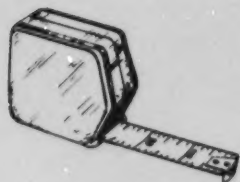


g. _____



h. _____

TEST



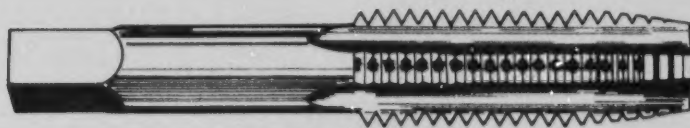
i. _____

4. List the common thread classifications.

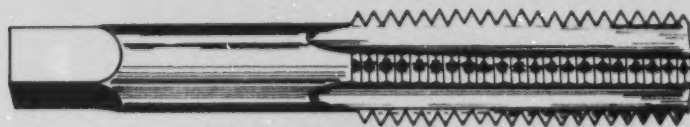
a. _____

b. _____

5. Label common types of taps with their appropriate names and uses.

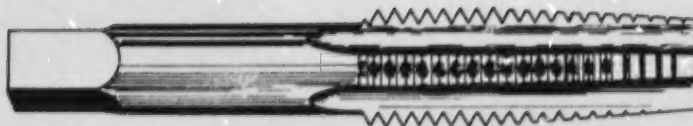


a. _____



b. _____

TEST



c. _____

6. Identify components of a thread-size classification. Write the correct names in the blanks.

	First number	Number immediately before letters	Letters
--	--------------	-----------------------------------	---------

- | | | | |
|----|-------|--------------------------------------|--|
| a. | _____ | Indicate type of threads | |
| b. | _____ | Indicates diameter of bolt | |
| c. | _____ | Indicates number of threads per inch | |

7. List the steps for using a tap drill chart to determine correct tap drill size.

- a. _____
 b. _____
 c. _____

8. Select from the following list reasons for tap failure. Write an "X" in the blank before each correct answer.

- | | |
|----------|--|
| _____ a. | Hole drilled too small |
| _____ b. | Tap turned too slowly |
| _____ c. | Tap not straight with hole |
| _____ d. | Use of dull tap |
| _____ e. | Not using cutting fluid |
| _____ f. | Incorrect chamfer on tap |
| _____ g. | Not backing up and breaking the chip |
| _____ h. | Not reversing direction of tap once point has reached bottom of hole |
| _____ i. | Use of NF threads instead of NC threads |
| _____ j. | Use of a too-large tap wrench |

TEST

9. Identify common head types for threaded fasteners. Write the correct names in the blanks.

Flat
Round
Oval

Pan
Hex
Square



a. _____



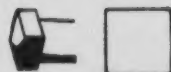
b. _____



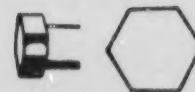
c. _____



d. _____

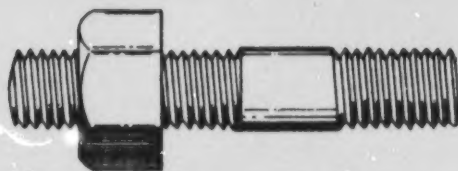


e. _____



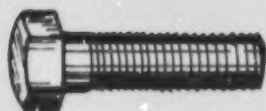
f. _____

10. Label common types of metal fasteners with their appropriate names and uses.



a. _____

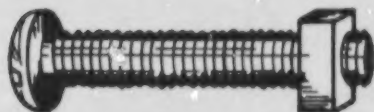
TEST



b. _____



c. _____

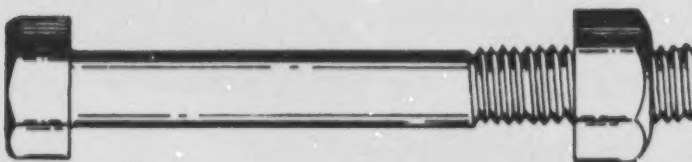


d. _____

TEST



e.



f.

11. Identify common grade markings for steel bolts. Write the correct names in the blanks.

Grade 5

Grade 2

Grade 8



a.



b.



c.

TEST

12. Label common types of washers. Write the correct names in the blanks.



a. _____



b. _____



c. _____

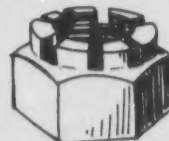


d. _____

13. Label common types of nuts. Write the correct names in the blanks.



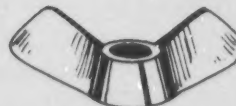
a. _____



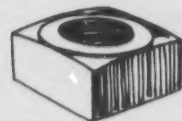
b. _____



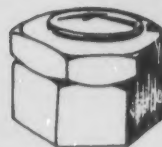
c. _____



d. _____



e. _____



f. _____

TEST



g. _____

14. List five advantages of riveting with a pop riveter.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

(NOTE: Test questions 15 and 16 list the assignment and job sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

15. Use a tap drill chart.

16. Demonstrate the ability to

- a. Use a hand hacksaw.
- b. Hand tap a hole in a piece of steel.
- c. Cut with a hand-threading die the threads on a piece of rod.
- d. Use a pop riveter.

METAL WORK
UNIT III

ANSWERS TO TEST

1. a. 3 e. 4
 b. 5 f. 2
 c. 1 g. 6
 d. 8 h. 7

2. a. Tap — Used to produce internal threads in a hole that has been drilled to a specific size or to recondition damaged threads
- b. Cold chisel — Used to chip flat surfaces and to cut thin sheet metal
- c. Screw extractor (easy-out) — Used to remove bolts and screws whose heads have been broken off or damaged
- d. Metal snips — Used to cut thin sheet metal, shim stock, or band-saw-blade material to size or shape
- e. Hole saw — Used to cut holes in metal when a hole larger than that made by available twist drills is needed
- f. File card — Used to clean a file
- g. Center punch — Used to mark the location of a hole prior to drilling by making a dent in the surface of the material
- h. File — Used to smooth, shape, or remove sharp edges from material in metal-work
- i. Adjustable threading die — Used to produce external threads by hand on stock of a particular size; mounted in a die stock that holds and turns threading die; also used to recondition damaged threads
- j. Hand hacksaw — Used to saw metal parts to size or shape by hand
- k. Die stock — Used to hold round threading dies when cutting threads by hand
- l. Tap wrench — Used to drive taps, hand reamers, and screw extractors of larger sizes ($\frac{3}{8}$ inch and up)
- m. Twist drill (drill bit) — Used to drill holes in metal with either a power hand drill motor (electric or air) or a drill press

ANSWERS TO TEST

3.
 - a. Framing square — Used to provide a straight edge, to measure, and to square
 - b. Inside caliper — Used to measure inside diameters and widths of slots
 - c. Pocket slide caliper — Used to make accurate outside and inside measurements
 - d. Screw-pitch gauge — Used to determine pitch, size, and number of various threads
 - e. Combination square — Used to provide a straight edge, to level, to measure, and to square
 - f. Outside caliper — Used to measure outside diameters
 - g. Firm-joint hermaphrodite caliper — Used to lay out plans from a reference surface; must be set with a scale
 - h. Divider — Used to lay out circles and arcs, to measure distance between points, and to transfer a measurement directly from a steel rule
 - i. Steel tape — Used to measure lengths
4.
 - a. National coarse (NC)
 - b. National fine (NF)
5.
 - a. Plug tap — Used after a taper tap when cutting threads to bottom of a closed hole
 - b. Bottoming tap — Used after the taper and plug taps, respectively, to complete threads in the bottom of a closed hole
 - c. Taper tap — Used to make threads in a hole that goes all the way through a piece of metal
6.
 - a. Letters
 - b. First number
 - c. Number immediately before letters
7.
 - a. Locate thread designation (size and thread) on chart
 - b. Move to right on chart to locate corresponding tap drill size
 - c. If number or letter drills are not available, use the tap drill having the closest decimal equivalent to the number or letter drill required

ANSWERS TO TEST

8. a, c, d, e, g, h, j
9. a. Oval
b. Flat
c. Round
d. Pan
e. Square
f. Hex
10. a. Stud — Used as a headless fastener that may be screwed into a threaded hole or may have a nut screwed onto either or both ends
b. Cap screw — Used to hold together two pieces of machinery
c. Sheet metal screw — Used to fasten together metal parts when the parts are not tapped with threads
d. Machine screw — Used for assembling small mechanical and electrical products
e. Setscrew — Used to hold together two parts to prevent one part from moving or turning
f. Machine bolt — Used to fasten together metal parts when a protruding head (one that sticks out) is not objectionable
11. a. Grade 5
b. Grade 8
c. Grade 2
12. a. Common lock
b. Internal lock
c. External lock
d. Plain flat

ANSWERS TO TEST

13.
 - a. Acorn or cap
 - b. Castle
 - c. Hexagon
 - d. Wing
 - e. Square
 - f. Jam or lock
 - g. Self-locking
14. Answers should include any five of the following
 - a. Easy
 - b. Fast
 - c. Inexpensive
 - d. Convenient in tight places
 - e. Reasonably permanent and trouble-free
 - f. Available in a variety of diameter sizes and lengths
 - g. Neat finished product
15. Evaluated to the satisfaction of the instructor
16. Performance skills evaluated to the satisfaction of the instructor

**OXY-GAS CUTTING
UNIT IV****UNIT OBJECTIVE**

After completing this unit, the student should be able to set up oxy-gas cutting equipment safely and make various types of cuts. The student will show this knowledge by completing the job sheets and unit test with a minimum score of 85 percent.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to

1. Match to their correct definitions terms associated with oxy-gas cutting.
2. Identify common types of fuel gases.
3. List the characteristics of oxygen.
4. Identify the functions of oxygen in the cutting process.
5. Identify the parts of oxy-gas cutting equipment.
6. Identify types of cutting torches.
7. Identify the parts of oxyacetylene regulators.
8. State safety precautions for handling oxy-gas equipment.
9. Name the components of a fire triangle.
10. Match types of oxyacetylene flames to their correct descriptions.
11. List the causes of backfire.
12. Arrange in order the steps to follow in case of flashback.
13. Demonstrate the ability to
 - a. Set up, test for leaks, and depressurize oxyacetylene equipment.
 - b. Turn on, light, adjust cutting torch to a neutral flame, and turn off oxyacetylene cutting equipment.
 - c. Make 90-degree cuts on mild steel and restart a cut.
 - d. Make a flame-beveled cut on mild steel plate.
 - e. Cut a hole in mild steel.

OXY-GAS CUTTING
UNIT IV

SUGGESTED ACTIVITIES

- I. Unit contents
 - A. Objective sheet
 - B. Suggested activities
 - C. Transparency masters
 - 1. TM #1 — Oxy-Gas Cutting Equipment
 - 2. TM #2 — Oxy-Gas Cutting Equipment (continued)
 - 3. TM #3 — Oxy-Gas Cutting Equipment (continued)
 - 4. TM #4 — Oxygen Regulator Gauges
 - 5. TM #5 — Acetylene Regulator Gauges
 - 6. TM #6 — The Fire Triangle
 - 7. TM #7 — Oxyacetylene Cutting Flames
 - D. Information sheet
 - E. Job sheets
 - 1. Job Sheet #1 — Set Up, Test for Leaks, and Depressurize Oxyacetylene Equipment
 - 2. Job Sheet #2 — Turn on, Light, Adjust Cutting Torch to a Neutral Flame, and Turn Off Oxyacetylene Cutting Equipment
 - 3. Job Sheet #3 — Make 90-Degree Cuts on Mild Steel and Restart a Cut
 - 4. Job Sheet #4 — Make a Flame-Beveled Cut on Mild Steel Plate
 - 5. Job Sheet #5 — Cut a Hole in Mild Steel
 - F. Test
 - G. Answers to test

SUGGESTED ACTIVITIES

II. Instructor's guide

A. Order materials to supplement the unit.

1. Audio-visual materials

- a. *The Cutting Torch—Flame Cutting*. Color, 18 minutes, BFA Media, 1972. Available from BFA Media, 468 Park Avenue South, New York, New York 10016.
- b. *Flame Cutting*. Color, 20 minutes, Macmillan Films, 1972. Available from Macmillan Films, 866 Third Avenue, New York, New York 10022.

(NOTE: These films are available on a free-loan basis to Oklahoma teachers from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074. Out-of-state teachers must order from the addresses listed above.)

- c. *Welding*, Section D—Oxyacetylene Welding (Media and Learning Activity Packet)

(NOTE: These slide-tape presentations and learning activity packets [LAPs] were developed to complement job sheets in the T & I welding book. They are available from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)

- d. Films from local gas and equipment companies

(NOTE: Check with your local suppliers.)

2. Cutting tip selection and gas pressure charts from the manufacturer of the cutting torches used in the shop.
3. Metal in sizes and quantities needed for students to practice job sheets.
4. Adequate supply of gases for students to practice job sheets.
5. Soap and brush for testing cutting outfit for leaks.
6. Oxy-propane cutting rig.

(NOTE: Demonstrate the oxy-propane rig to students because this is the type of equipment some students may have at home.)

SUGGESTED ACTIVITIES

7. Both types of cutting torches.

B. Make or obtain transparencies.

(NOTE: Transparencies are available from the Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)

C. Introduce unit by pointing out to students the versatility of the cutting torch for all types of metal construction and repair.

SUGGESTIONS:

- Give examples of the uses of the cutting torch in the farm shop.
- Explain that people skilled with a cutting torch and in arc welding obtain well-paying jobs.

D. Provide students with objective sheet.

E. Discuss unit and specific objectives.

SUGGESTIONS:

- Emphasize to students that the major thrust of the unit is to learn how to use the cutting torch safely and skillfully.
- Point out briefly what the main emphasis of each objective is and how all of the objectives build on each other to provide the knowledge and skills needed to accomplish the unit objective.

F. Provide students with information and job sheets.

G. Discuss information and job sheets.

(NOTE: This unit contains five job sheets, all of which build upon each other. Each succeeding job sheet also becomes more difficult.)

1. Discuss terms and definitions associated with oxy-gas cutting. Use Information Sheet, Section I, Transparency #1, and an actual oxy-gas cutting rig.

SUGGESTIONS:

- Bring the oxy-gas cutting rig into the classroom to illustrate some of the terms.
- Use Transparency #1 to point out some of the terms when they are being discussed.

SUGGESTED ACTIVITIES

- To illustrate the term *bevel cut*, show students a sample steel plate that has been beveled with a cutting torch.
 - Pass around, for each student to see, pieces of soapstone when discussing that term.
2. Discuss common types of fuel gases used in oxy-gas cutting. Use Information Sheet, Section II.

SUGGESTIONS:

- Invite a local gas supplier to discuss advantages and disadvantages of the various fuel gases.
 - Ask students to discuss any instances that they know of in which a fuel gas other than acetylene is used.
 - Place special emphasis on flame temperatures and stability ratings of the various gases.
 - Stress the economics of the various gases. Even though propane may be easily accessible in rural areas, it may not be the most economical choice of a fuel gas.
3. Discuss the characteristics of oxygen. Use Information Sheet, Section III.

SUGGESTIONS:

- Release some oxygen into the classroom air to show students that oxygen is colorless and odorless.
- Perform the following demonstration to emphasize that oxygen supports and intensifies combustion.
 - a. Position a small burning candle on a table.
 - b. Set a glass container over the candle; the candle will burn out when the oxygen trapped in the container is used up.
 - c. Relight the candle.
 - d. Fill the container with oxygen from the torch, maintaining as good a seal as possible with your hand.
 - e. Quickly set the oxygen-filled container down over the lighted candle to illustrate how the high concentration of oxygen intensifies the flame.

SUGGESTED ACTIVITIES

4. Discuss the functions of oxygen in the cutting process. Use Information Sheet, Section IV.

SUGGESTIONS:

- Emphasize to students that the preceding demonstration showed how oxygen can intensify flame temperature as stated in Section IV A.
 - Remind students that flame temperatures range from 5600°F to 6300°F.
 - Perform a cutting demonstration to show how the molten metal is blown out by the pressure of the oxygen.
5. Discuss the parts of the oxy-gas cutting equipment. Use Information Sheet, Section V, Transparencies #1 through #3, and the actual equipment.

SUGGESTIONS:

- Use unassembled equipment when starting this discussion, thereby demonstrating the process in Job Sheet #1 as the equipment is put together and each part is explained.
- Stress to the students the importance of knowing all of the parts of the cutting rig and their proper names.
- Show students the proper way to hold a flint lighter and to strike a spark.
- Stress the importance of always checking the lens of the cutting goggles or shaded face shield.

EXAMPLE: Recommended shade numbers for oxygen cutting

3 or 4 — Metal up to 1 inch thick
 4 or 5 — Metal 1 inch to 6 inches thick
 5 or 6 — Metal 6 inches thick and over

6. Show and discuss the types of cutting torches. Use Section VI of the Information Sheet, Transparencies #2 and #3, and the actual torches.

SUGGESTIONS:

- Ask students if they have cutting torches at home, and have students tell which type they have.
- Point out that one of the advantages of the two-piece torch is that it can be converted to a welding torch.

SUGGESTED ACTIVITIES

7. Discuss the parts of regulators. Use Information Sheet, Section VII, Transparencies #4 and #5, and actual regulators.

SUGGESTIONS:

- Ask students to discuss or point out the differences in the two regulators.
 - Emphasize the importance of keeping the regulators clean.
 - Point out the note and check valves in Figures 7 and 8. Discuss the importance of having check valves on the cutting rig.
8. Discuss safety precautions for oxy-gas cutting. Use Information Sheet, Section VIII, as well as the actual cutting rig.

SUGGESTIONS:

- Review Job Sheet #1, emphasizing safety precautions as you work through the procedures.
 - Emphasize that the oxy-gas cutting rig is potentially the most dangerous piece of equipment in the vocational agriculture shop, but it is safe if it is cared for and used properly.
9. Use Information Sheet, Section IX, and Transparency #6 to discuss the components of a fire triangle.

SUGGESTIONS:

- Emphasize that the cutting torch flame is extremely hot, and that the sparks thrown off in the cutting process can start a fire on many surrounding materials.
- Stress to students that they must understand the concept of the fire triangle to be able to control a fire caused by the cutting torch.
- Remind students that fire extinguishers should always be properly charged, and that it is each student's responsibility to always know where fire extinguishers are located and how to use them.

SUGGESTED ACTIVITIES

10. Discuss and demonstrate the types of oxyacetylene flames. Use Section X of the Information Sheet, Transparency #7, and actual torch flames.

SUGGESTIONS:

- Explain how to recognize the different oxyacetylene flames and how to adjust the torch to the desired flame.
- After demonstrating how to adjust the lighted torch to the various types of flames, allow each student to adjust the lighted torch.

11. Discuss causes of backfire. Use Information Sheet, Section XI.

SUGGESTIONS:

- Stress that should a torch backfire, the problem must be analyzed and corrected before continued use.
- Stress to students that even if they as operators are at fault, backfire must be reported to the instructor immediately so that corrections can be made.

12. Use Information Sheet, Section XII to discuss steps to follow in case of flashback.

SUGGESTIONS:

- Require students to know these steps in correct order before they are allowed to operate a torch.
- Explain the logic of the steps as they are performed.
- Remind the students that check valves become a valuable investment in the event of a flashback.

13. Show the films or slide shows at this point, explaining how they relate to what has been discussed and what is upcoming in the job sheets.

14. Allow students to practice Job Sheet #1 until they have reached the expected proficiency.

15. Demonstrate Job Sheets #2 through #5, and then allow the students to practice the job sheet skills while supervising them.

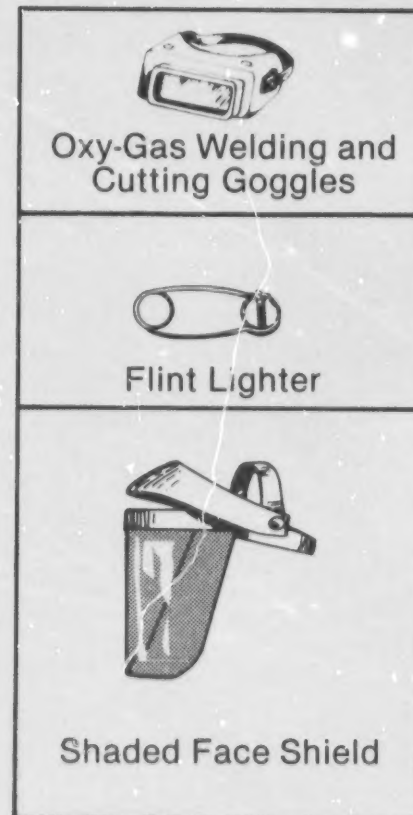
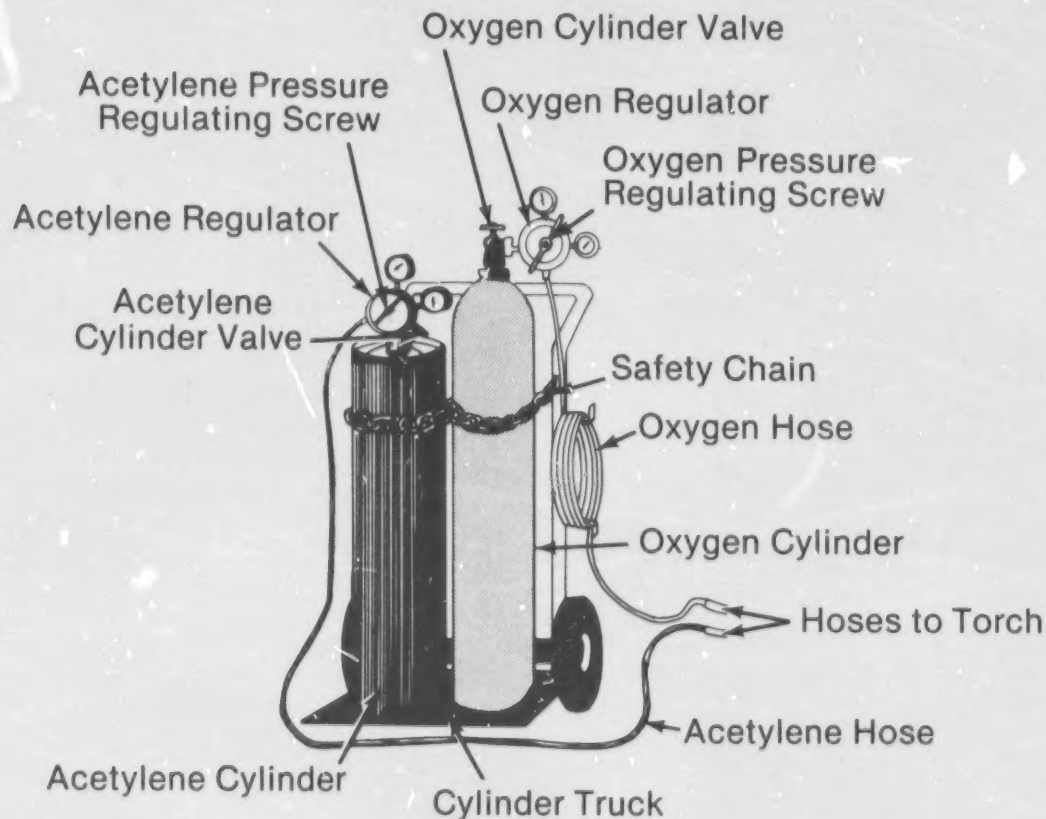
- H. Give test

SUGGESTED ACTIVITIES

III. Unit references

- A. Althouse, Andrew D., Carl H. Turnquist, and William A. Bowditch. *Modern Welding*. Homewood, Illinois: Goodheart-Willcox Company, Inc., 1980.
- B. Braker, Clifton R. "Pete." *Vocational Agriculture I*, rev. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1974.
- C. *Developing Shop Safety Skills*. Athens, Georgia: American Association for Vocational Instructional Materials, 1984.
- D. Hendrix, Laborn J. "Bud." *Millwright Instructional Materials*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, and The Associated General Contractors of America, 1980.
- E. Kennedy, Gower A. *Welding Technology*. Indianapolis, Indiana: Howard W. Saws and Company, Inc., 1975.
- F. *Oxyacetylene Flame Tracts* (Form 235). Minneapolis, Minnesota: Smith Welding Equipment, Division 7, Tescom Corporation., n.d.
- G. "Safety Is for Sissies." Minneapolis, Minnesota: Smith Welding Equipment, a division of Tescom Corporation, 1968.

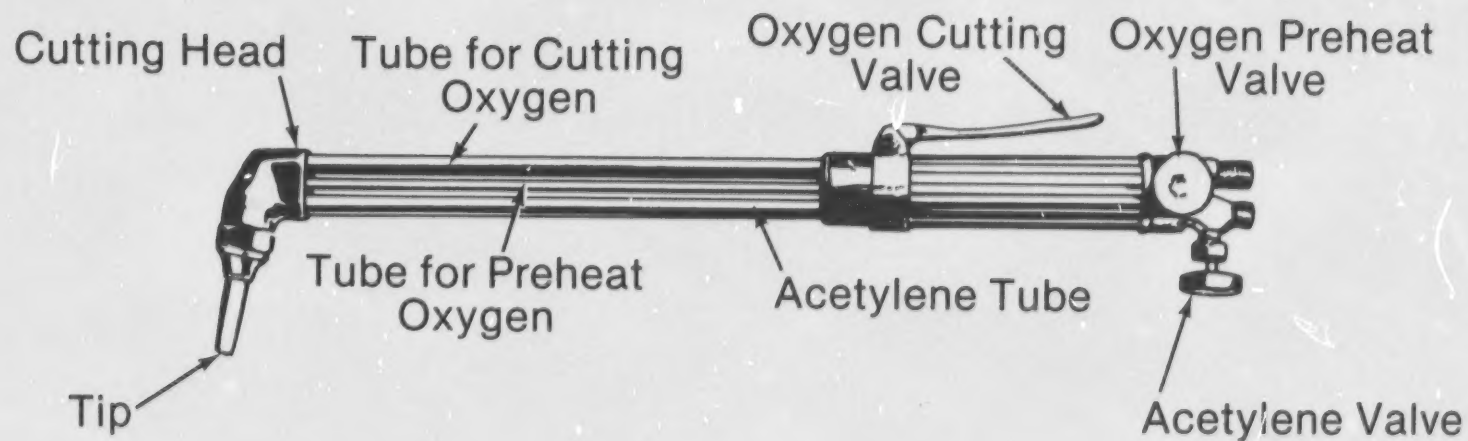
Oxy-Gas Cutting Equipment



Oxy-Gas Cutting Equipment

(Continued)

Single-Unit Cutting Torch



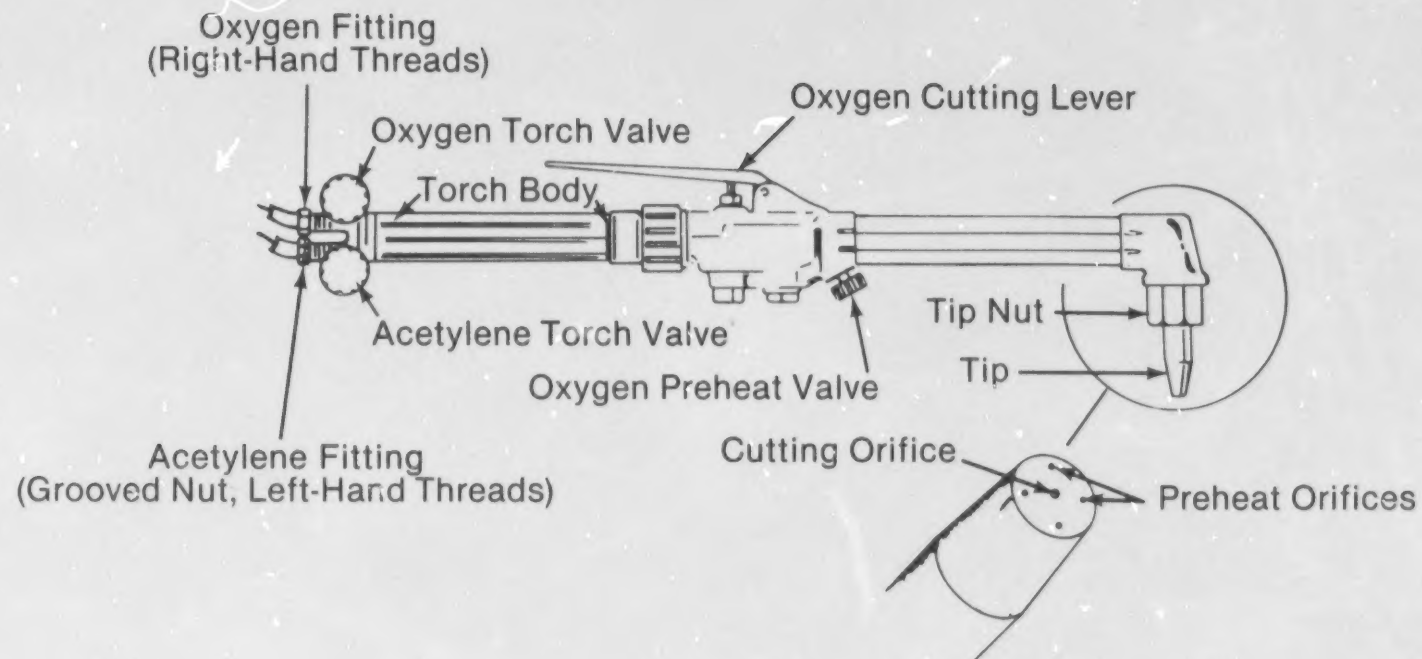
1316

1317

Oxy-Gas Cutting Equipment

(Continued)

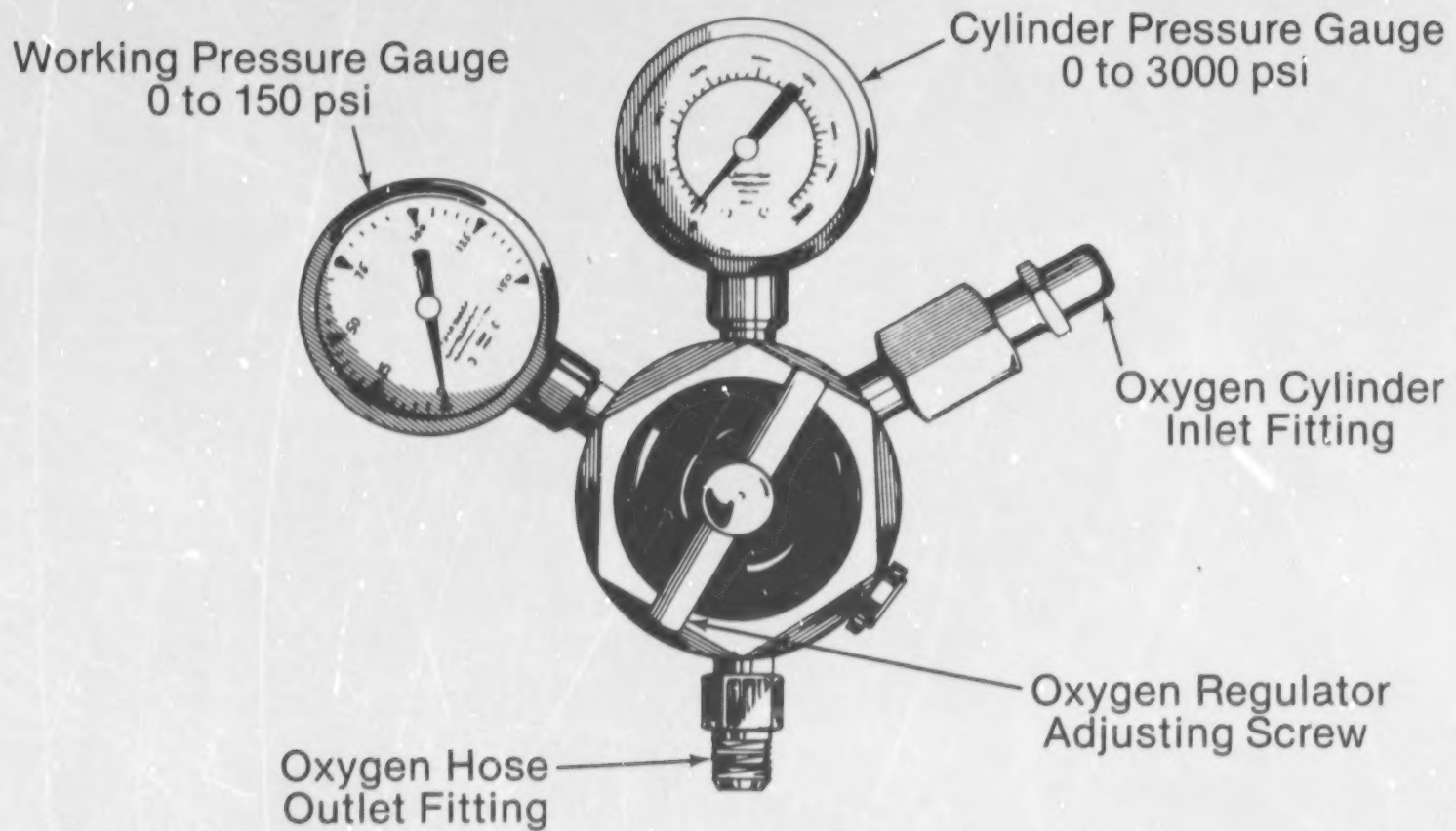
Two-Piece Cutting Torch Assembly



1318

1319

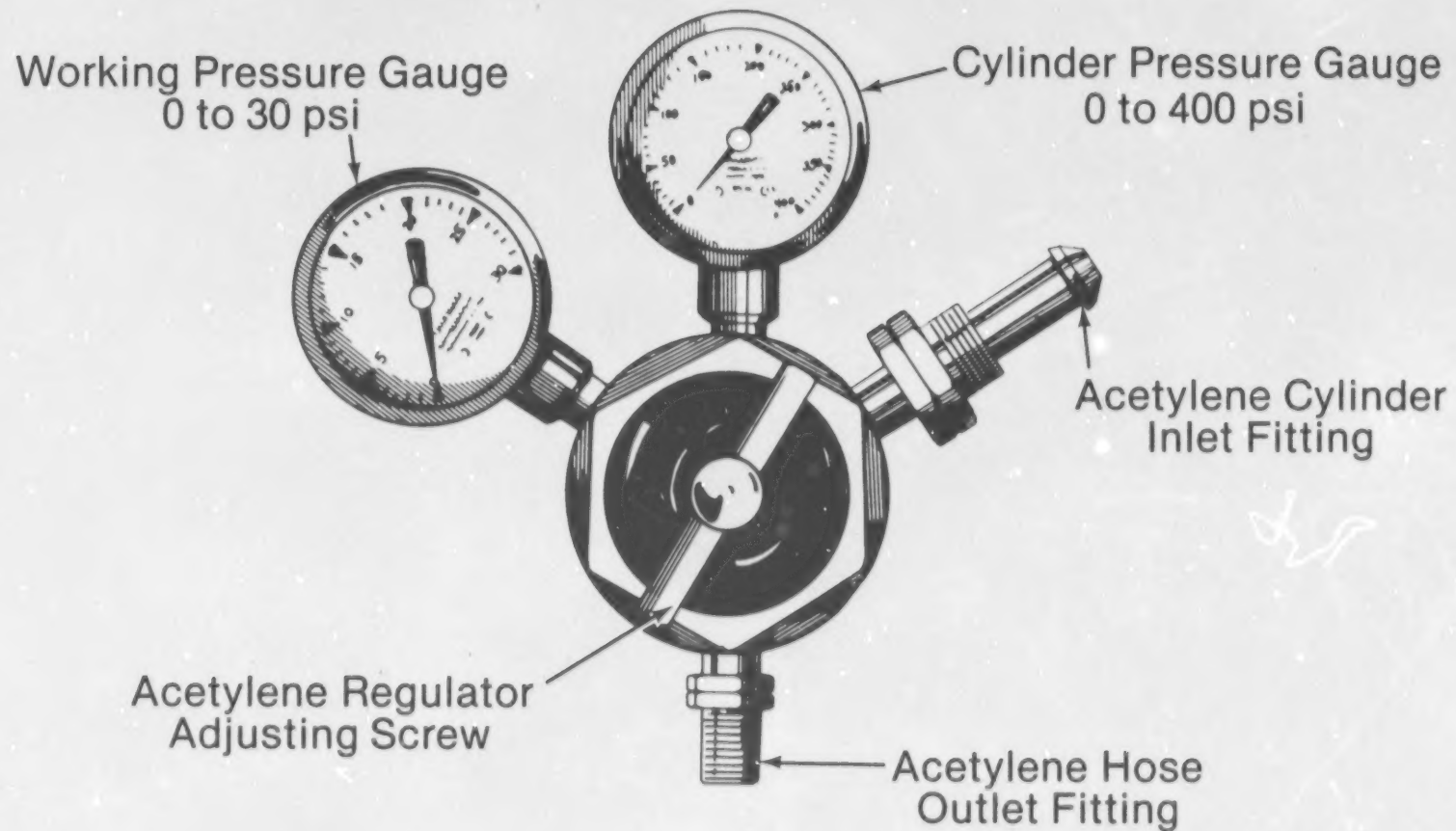
Oxygen Regulator Gauges



1320

1321

Acetylene Regulator Gauges



1322

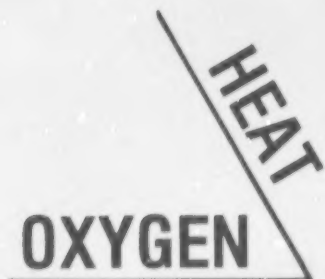
1323

The Fire Triangle

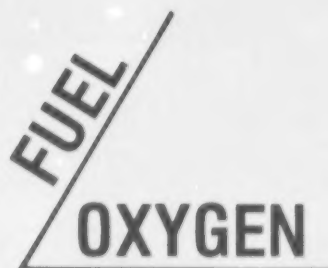
To produce fire, three things must be present at the same time.



If any one of the three is missing, a fire cannot be started. With the removal of any one, the fire will be extinguished.

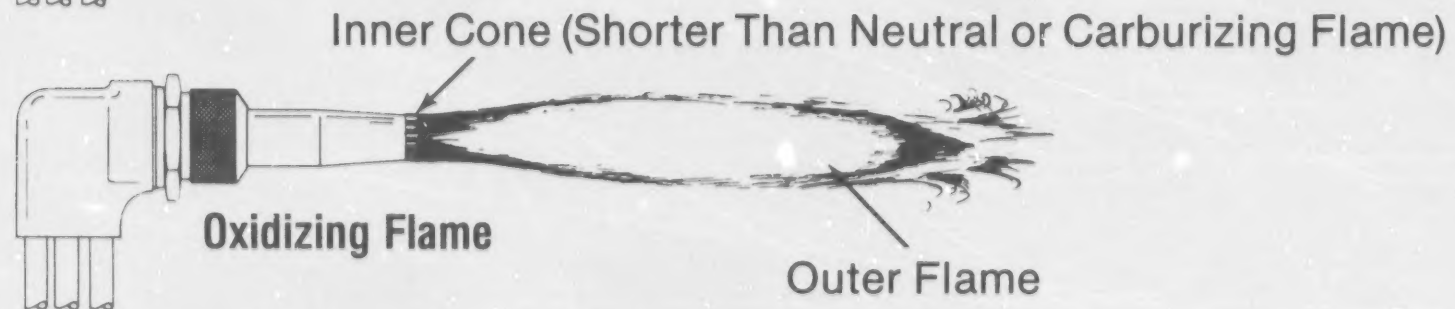
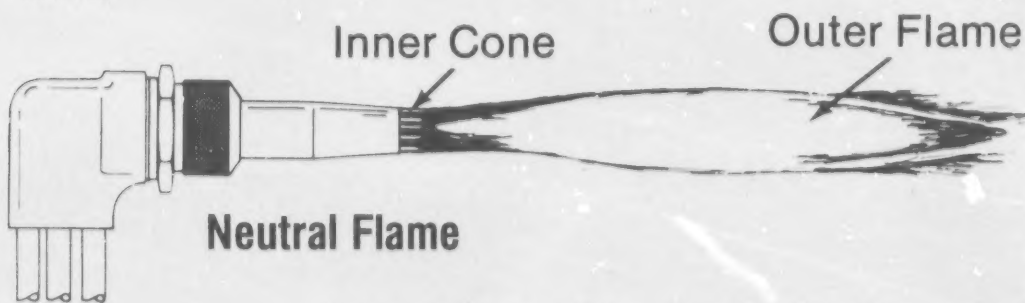


1324



1325

Oxyacetylene Cutting Flames



OXY-GAS CUTTING
UNIT IV

INFORMATION SHEET

I. Terms and definitions

- A. Oxy-gas cutting — Group of cutting processes in which metal is cut by the chemical reaction of oxygen with the base metal at a high temperature produced by a gas flame burned with oxygen

(NOTE: Oxy-gas cutting is used with metals containing iron [ferrous metals] as opposed to nonferrous metals such as aluminum, copper, and others.)

- B. Cylinder — Portable, round container used to transport and store compressed gas

- C. Regulator — Tool attached to cylinder; controls gas flow at a constant rate; has two gauges, one that shows pressure in cylinder, and one that shows working pressure going to torch

(NOTE: The source is usually a cylinder, but sometimes it may be a manifold system fed by cylinders.)

- D. Cylinder valve — Valve installed in top of cylinder to turn on and off the flow of gas from cylinder

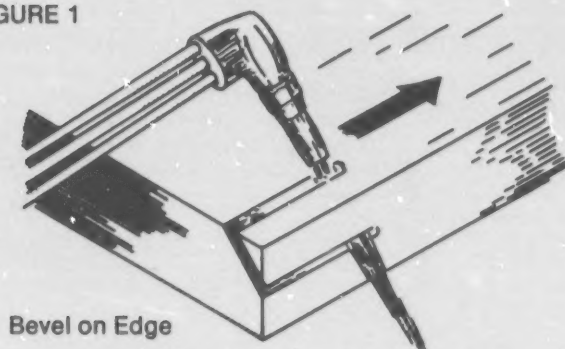
- E. Slag — Waste by-product of the oxy-gas cutting process; consists of oxidized iron and ashes

- F. Slag box — Metal container that contains a layer of water or sand to catch hot slag during cutting operation

- G. Bevel cut — Angled cut on metal; made with cutting torch (Figure 1)

EXAMPLE:

FIGURE 1



INFORMATION SHEET

- H. Flashback — Dangerous condition in which flame burns back inside torch body; characterized by a hissing sound and smoke and/or sparks emitted from torch tip
- I. Backfire — Condition in which flame momentarily burns back into tip; characterized by a loud snap or pop and the flame either going out or continuing to burn
- J. Purge — Process of forcing gases through the hoses and cutting torch to remove foreign material or impurities
- K. Oxyacetylene cutting — Most common type of oxy-gas cutting; uses acetylene as the fuel gas
- L. Soapstone — Device used to mark metal in all types of metalworking procedures
- M. Combustion — Act or instance of burning
- N. Oxidize — To combine with oxygen

(NOTE: Rust is the result of a slow oxidation process.)

II. Common types of fuel gases (Table 1)

TABLE 1

Type of Fuel Gas	Flame Temperature with Oxygen	Characteristics	Place and Frequency of Use
Acetylene	6300°F	Unstable under pressures over 15 psi Most efficient oxygen consumption as related to flame temperature Distinct odor Colorless	Most common in schools Most versatile for gas welding operations
Mapp	6000°F	Stable Second most efficient oxygen consumption as related to flame temperature Distinct odor Colorless	Increasing use in industry

INFORMATION SHEET

Type of Fuel Gas	Flame Temperature with Oxygen	Characteristics	Place and Frequency of Use
Propane	5300°F	Stable Poor oxygen consumption efficiency rating as related to flame temperature Suitable for heating and cutting operations only (NOTE: Propane cannot be used for welding operations.) Distinct odor Colorless	Easily accessible and commonly used on many farms and in rural areas
Natural	4600°F	Stable Poor oxygen consumption efficiency and low-temperature flame Colorless	Limited industrial use because of its inaccessibility

III. Characteristics of oxygen

- A. Colorless
- B. Odorless
- C. Tasteless
- D. Supports and intensifies combustion

IV. Functions of oxygen in the cutting process

- A. Combines with fuel gas to intensify flame temperature
- B. Combines with iron in ferrous metals to oxidize iron
- C. Blows out melted metal to speed cutting process

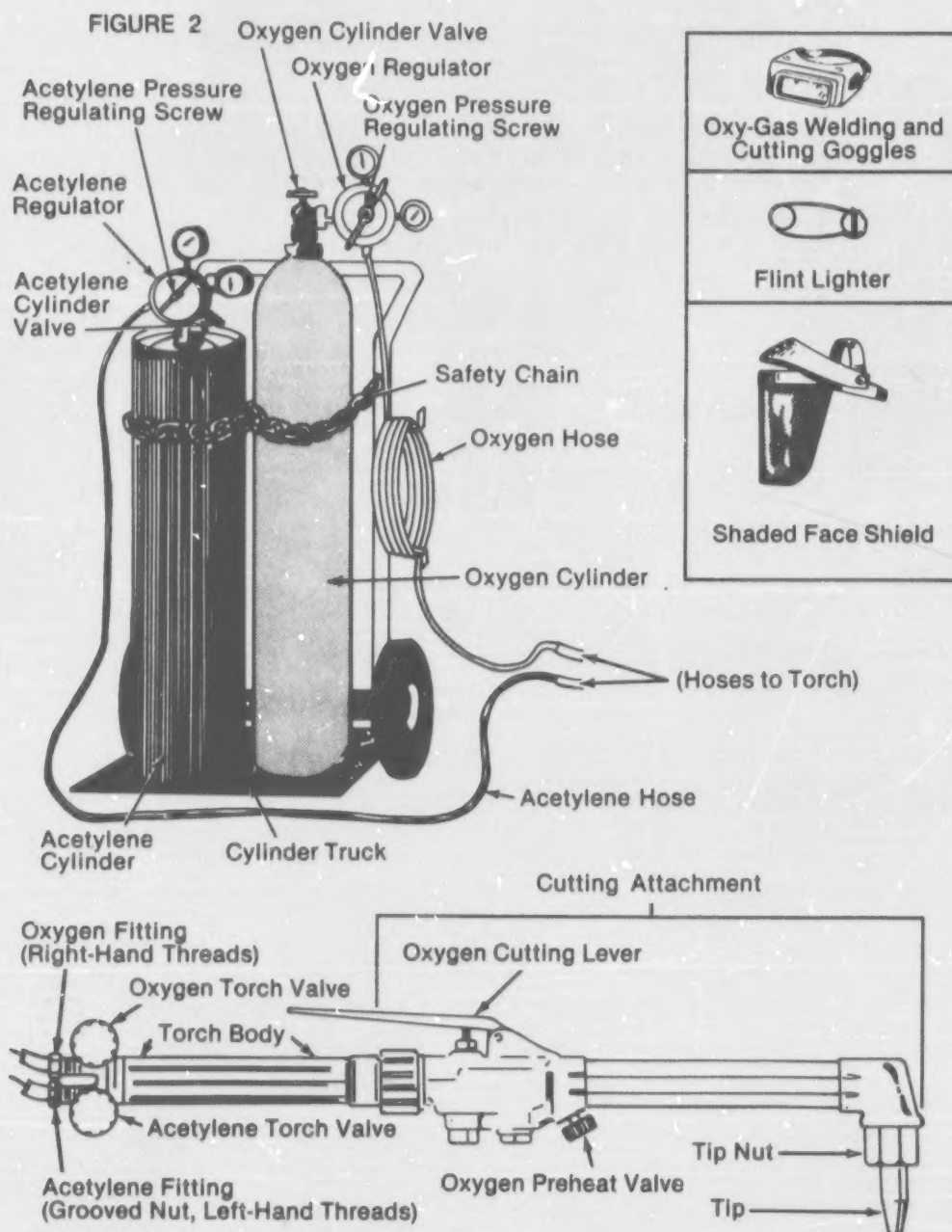
(NOTE: Oxidized iron, like anything oxidized, is burned up or consumed.)

(NOTE: Some of the metal is removed by oxidizing; the rest is actually blown out by the high pressure of the oxygen when the cutting lever is pressed.)

INFORMATION SHEET

V. Parts of oxy-gas cutting equipment (Figure 2)

(NOTE: The shaded face shield is acceptable for oxy-gas cutting operations *only* when equipped with a shaded filter shield. A clear face shield is *not* acceptable for cutting operations.)



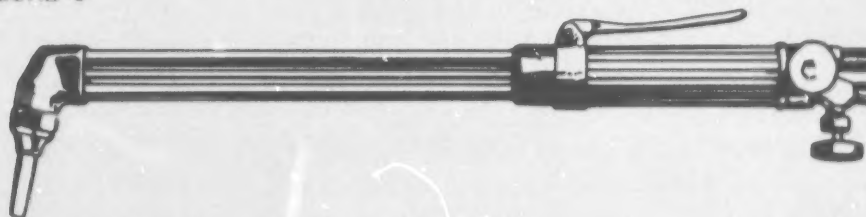
INFORMATION SHEET

VI. Types of cutting torches (Figures 3 and 4)

(NOTE: Different types of tips are required for the different fuel gases and torches. Tip sizes also vary, based upon the cutting job to be performed. Manufacturers make size recommendations for their particular equipment.)

A. Single-unit cutting torch

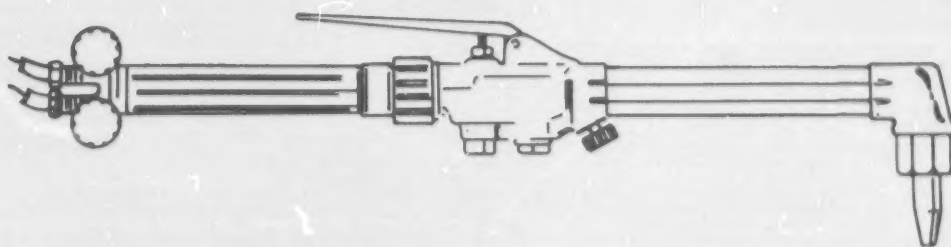
FIGURE 3



B. Two-piece cutting torch assembly

(NOTE: On this type of assembly, the cutting attachment can be removed from the torch body and replaced by a welding tip, thereby creating a dual-purpose piece of equipment.)

FIGURE 4

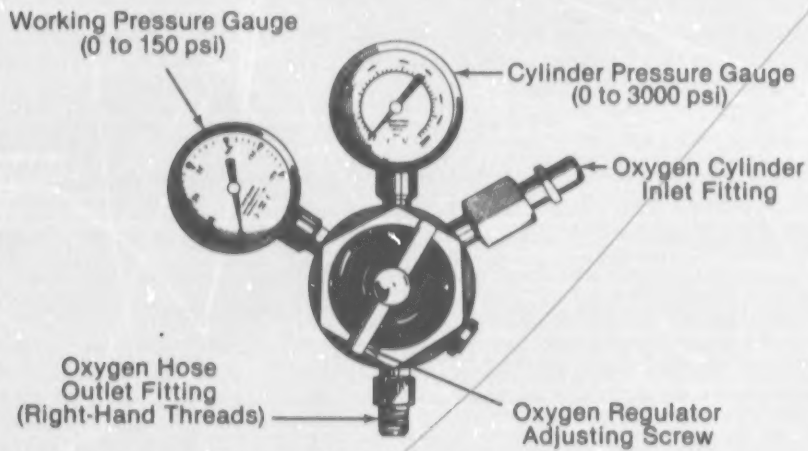


INFORMATION SHEET

VII. Parts of oxyacetylene regulators (Figures 5 and 6)

A. Oxygen regulator

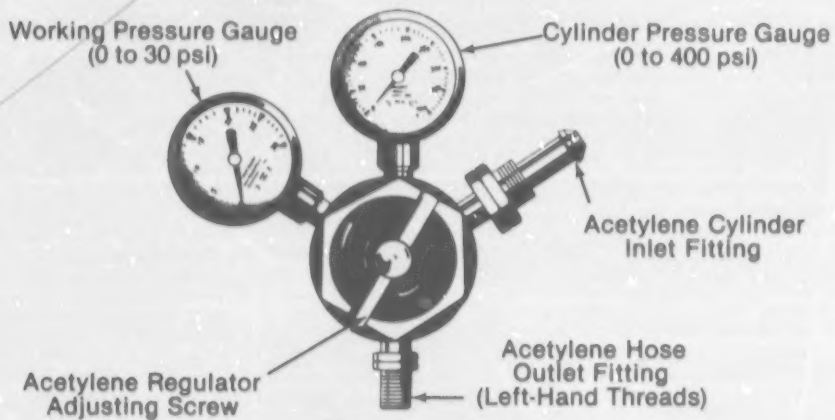
FIGURE 5



B. Acetylene regulator

(NOTE: An acetylene regulator can be used for other types of fuel gases in oxy-gas cutting operations.)

FIGURE 6



INFORMATION SHEET

(NOTE: As an added safety precaution to prevent flames from flashbacks and backfires from entering regulators and cylinders, check valves can be added between the hose and regulator connection. See Figures 7 and 8.)

EXAMPLES:

FIGURE 7



Acetylene Reverse-Flow
Check Valve

FIGURE 8



Oxygen Reverse-Flow
Check Valve

VIII. Safety precautions for handling oxy-gas equipment (Figures 9-18)

- A. Before attaching regulators, blow out cylinder valve by opening and closing valve quickly

EXAMPLE:

FIGURE 9



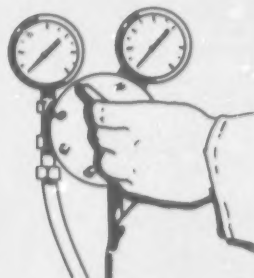
Used with permission of Smith Welding Equipment, a division of Tescom Corporation.

INFORMATION SHEET

- B. Before opening cylinder valves, check to make sure that adjusting screws on regulators are loose

EXAMPLE:

FIGURE 10

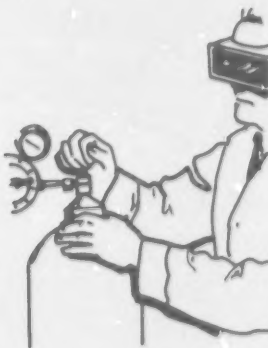


Used with permission of Smith Welding Equipment, a division of Tescom Corporation.

- C. Stand to one side of regulator when opening cylinder valve

EXAMPLE:

FIGURE 11



Adapted with permission of Smith Welding Equipment, a division of Tescom Corporation.

INFORMATION SHEET

- D. Open cylinder valve slowly to prevent explosions

EXAMPLE:

FIGURE 12

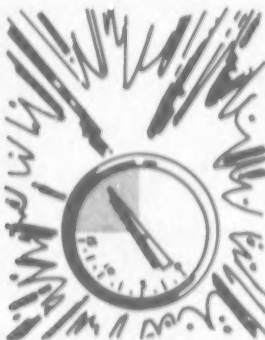


Used with permission of Smith Welding Equipment, a division of Tescom Corporation.

- E. Do not use or compress acetylene (in free state) at pressures greater than 15 pounds per square inch (psi)

EXAMPLE:

FIGURE 13



Used with permission of Smith Welding Equipment, a division of Tescom Corporation.

INFORMATION SHEET

F. Purge oxygen and fuel-gas passages individually before lighting torches

EXAMPLE:

FIGURE 14

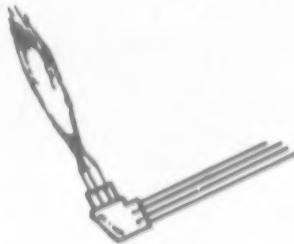


Adapted with permission of Smith Welding Equipment, a division of Tescom Corporation.

G. Light fuel gas before opening oxygen valve on torch

EXAMPLE:

FIGURE 15



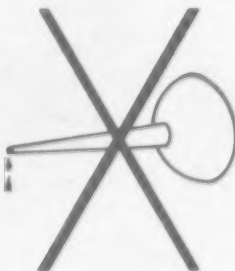
Adapted with permission of Smith Welding Equipment, a division of Tescom Corporation.

INFORMATION SHEET

- H. Never use oil or grease on regulators, torches, fittings, or other equipment in contact with oxygen

EXAMPLE:

FIGURE 16



- I. Never use oxygen as a substitute for compressed air

EXAMPLE:

FIGURE 17



Adapted with permission of Smith Welding Equipment, a division of Teucom Corporation.

INFORMATION SHEET

- J. Keep combustible materials away from cutting areas

EXAMPLE:

FIGURE 18



Used with permission of Smith Welding Equipment, a division of Tescom Corporation.

- K. Always wear leather welding and cutting gloves

(CAUTION: Never handle hot materials with the gloves, as this hardens the leather and causes the gloves to lose their flexibility and usability.)

- L. Wear oxy-gas welding and cutting goggles

(NOTE: The suggested shade range for oxy-gas cutting is 3 through 6.)

- M. Wear protective clothing to protect all parts of the body

EXAMPLES: Long-sleeved nonsynthetic shirt, trousers with no cuffs and no frays, high-topped leather shoes or boots

- N. Never cut containers that have been used for combustible materials

- O. Avoid breathing toxic fumes when cutting

EXAMPLE: Fumes from galvanized metal

- P. Always place steel caps on cylinders when they are being moved or are in storage

- Q. Always use flint lighter to light torch

- R. Always protect hoses from hot slag, hot metal, or mechanical damage

- S. Always operate torch in a well-ventilated area

- T. Always support or store cylinders in an upright position

INFORMATION SHEET

IX. Components of a fire triangle (Figure 19)

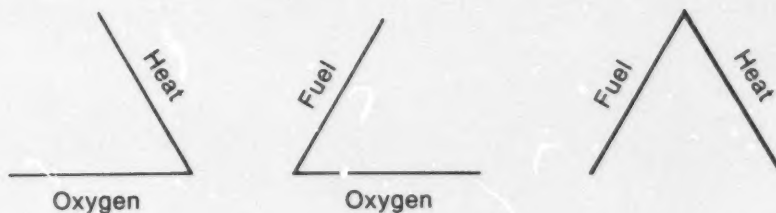
FIGURE 19



(NOTE: To produce fire, all three elements are necessary and must be present at the same time. If any one of the three is missing, a fire cannot be started. With the removal of fuel, heat, or oxygen, the fire will be extinguished. See Figure 20.)

EXAMPLE:

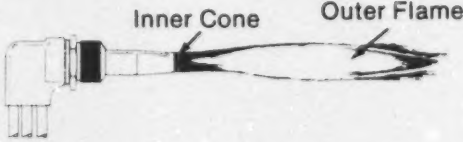
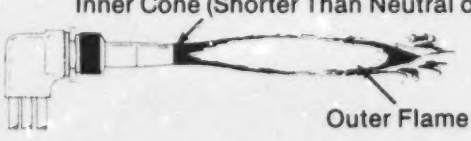
FIGURE 20



INFORMATION SHEET

X. Descriptions of types of oxyacetylene flames (Table 2)

TABLE 2

Type of Flame	Description
Carburizing flame	Has excess acetylene gas in flame Shows acetylene feather burning around inner cone Burns extra acetylene, thus causing metal to become brittle
EXAMPLE:	 Inner Cone Acetylene Feather Outer Flame
Neutral flame	Has sharp inner cone Does not show acetylene feather Burns equal parts of gases from cylinders
EXAMPLE:	 Inner Cone Outer Flame
Oxidizing flame	Has excess oxygen in flame Has short inner cone, and makes whistling sound Burns metal, causing it to become brittle
EXAMPLE:	 Inner Cone (Shorter Than Neutral or Carburizing Flame) Outer Flame

INFORMATION SHEET

XI. Causes of backfire

(NOTE: If a torch backfires, notify your instructor so that the condition can be corrected.)

- A. Insufficient pressure of fuel gas or oxygen
- B. Loose cutting tip
- C. Dirty tip
- D. Overheating of cutting tip caused by bringing tip too close to molten puddle
- E. Bad O-ring in torch body
- F. Too large a tip used in conjunction with small fuel-gas cylinder

XII. Steps to follow in case of flashback

(NOTE: If heavy smoke comes out of the torch and the torch body becomes hot, the flashback has probably traveled past the mixing chamber into the hose. In this case, shut off the oxygen cylinder valve and the fuel-gas cylinder valve, and then notify your instructor.)

- A. Close fuel-gas torch valve
- B. Close oxygen preheat valve
- C. Close oxygen torch valve
- D. Release oxygen regulator screw
- E. Release fuel-gas regulator screw
- F. Examine fuel-gas unit
- G. Reset regulator pressures
- H. Light torch

OXY-GAS CUTTING
UNIT IVJOB SHEET #1 — SET UP, TEST FOR LEAKS,
AND DEPRESSURIZE OXYACETYLENE EQUIPMENT

I. Equipment and materials

- A. Oxygen cylinder
- B. Acetylene cylinder
- C. Oxygen regulator
- D. Acetylene regulator
- E. Hoses
- F. Wrench
- G. Cylinder truck
- H. Water container
- I. Soapsuds
- J. Clean paintbrush
- K. Torch body with cutting attachment
- L. Tip selection guide

II. Procedure

(NOTE: Safety glasses or goggles should be worn in the shop at all times.)

- A. Fasten cylinders in a vertical position in the cylinder truck or in a permanent location
- B. Remove caps from cylinders
- C. Blow out valves of each cylinder, then quickly close valves
- D. Connect oxygen regulator to oxygen cylinder
 - 1. Turn adjusting screw on regulator counterclockwise until tension on spring is released
 - 2. Slowly turn cylinder valve wide open while standing to one side of regulator

JOB SHEET #1

- E. Connect acetylene regulator to acetylene cylinder
1. Turn adjusting screw on regulator counterclockwise until tension on spring is released
 2. Open cylinder valve one-half to three-quarters of a turn
- (CAUTION: Never open cylinder valve more than one-and-one-half turns.)
- F. Connect acetylene hose to acetylene regulator, and purge hose by turning regulator adjusting screw clockwise until gas flows through hose; then quickly loosen regulator adjusting screw
- G. Repeat this procedure with the oxygen regulator and hose
- H. Connect torch body to oxygen and acetylene hoses, and close both valves on torch body
- I. Attach cutting attachment to torch body
- (NOTE: The tip size is determined by the thickness of the metal to be cut and the manufacturer's recommendations.)
- J. Close oxygen preheat valve on cutting attachment
- K. Turn adjusting screw on oxygen regulator clockwise until working pressure is reached
- L. Turn adjusting screw on acetylene regulator clockwise until correct working pressure is reached
- M. Test all connections for leaks with soapsuds and water
1. Apply soapsuds with a clean paintbrush to all connections
 2. If any bubbles occur as a result of leaks, notify your instructor immediately
- N. Close acetylene cylinder valve
- O. Close oxygen cylinder valve
- P. Open acetylene valve on torch
- Q. Close acetylene valve on torch when gauges reach zero
- R. Release adjusting screw on acetylene regulator by turning counterclockwise

JOB SHEET #1

- S. Open oxygen preheat valve on torch
- T. Close oxygen preheat valve on torch when gauges reach zero
- U. Release adjusting screw on oxygen regulator by turning counterclockwise
- V. Close oxygen valve on torch
- W. Place torch and hose on hanger or brackets provided
- X. Clean work area and put away equipment and materials

OXY-GAS CUTTING
UNIT IVJOB SHEET #2 — TURN ON, LIGHT, ADJUST CUTTING
TORCH TO A NEUTRAL FLAME, AND TURN OFF
OXACETYLENE CUTTING EQUIPMENT

I. Equipment and materials

- A. Cutting outfit with tip assembly
- B. Flint lighter
- C. Wrench
- D. Leather gloves
- E. Shaded welding goggles or shaded face shield
- F. Coveralls or protective clothing
- G. Tip selection guide

II. Procedure for turning on, lighting, and adjusting the cutting torch to a neutral flame

(NOTE: Safety glasses or goggles should be worn in the shop at all times.)

- A. Check all cylinder, regulator, and torch valves to make sure that they are off
- B. Open acetylene cylinder valve one-half to three-quarters of a turn

(CAUTION: Never open acetylene cylinder valve more than one-and-one-half turns.)

- C. Open acetylene valve on torch one turn
- D. Turn adjusting screw on acetylene regulator clockwise until desired pressure is reached

(NOTE: Oxygen and acetylene pressures and tip size depend upon the thickness of the metal to be cut. Use pressures and tip size recommended by manufacturer.)

- E. Close acetylene valve on torch
- F. Open oxygen cylinder valve all the way
- G. Open oxygen torch valve all the way

JOB SHEET #2

- H. Open oxygen preheat valve on cutting attachment one turn
- I. Turn adjusting screw on oxygen regulator clockwise until desired pressure is reached
- J. Close oxygen preheat valve on cutting attachment
- K. Open acetylene valve on torch one-quarter turn
- L. Light torch with flint lighter, and adjust until smoke on flame clears
- M. Open oxygen preheat valve slowly and adjust to a neutral flame
- N. Depress oxygen cutting lever and check to see that a neutral flame is present

(NOTE: If necessary, adjust the oxygen preheat valve with the oxygen cutting lever depressed until a neutral flame is secured.)

III. Procedure for turning off the flame and oxyacetylene unit

- A. Close acetylene valve on torch
- B. Close oxygen preheat valve
- C. Close acetylene cylinder valve
- D. Close oxygen cylinder valve
- E. Open acetylene valve on torch
- F. Close acetylene valve on torch when gauges reach zero
- G. Release adjusting screw on acetylene regulator by turning counterclockwise
- H. Open oxygen preheat valve on torch
- I. Close oxygen preheat valve on torch when gauges reach zero
- J. Release adjusting screw on oxygen regulator by turning counterclockwise
- K. Close oxygen valve on torch
- L. Place torch and hose on hanger or brackets provided
- M. Clean work area, and put away equipment and materials

OXY-GAS CUTTING
UNIT IVJOB SHEET #3 — MAKE 90-DEGREE CUTS ON
MILD STEEL AND RESTART A C'JT

I. Equipment and materials

A. Cutting outfit with tip assembly

(NOTE: Check with instructor or manufacturer's recommendations for correct tip size.)

B. Tip selection guide

C. Mild steel plate, $\frac{1}{4}$ inch to $\frac{1}{2}$ inch thick; at least 4 inches wide and 8 inches long

D. Soapstone with a sharp point or edge

E. Straightedge

F. Leather gloves

G. Shaded welding goggles

H. Pliers

I. Coveralls or protective clothing

J. Flint lighter

K. Welding or cutting table

L. Slag box

M. Can of water

II. Procedure

(NOTE: Safety glasses or goggles should be worn in the shop at all times.)

A. Using soapstone and straightedge, mark three parallel lines 2 inches apart on plate to be cut

B. Turn on oxyacetylene rig and adjust working pressures until desired pressure is reached (Job Sheet #1)

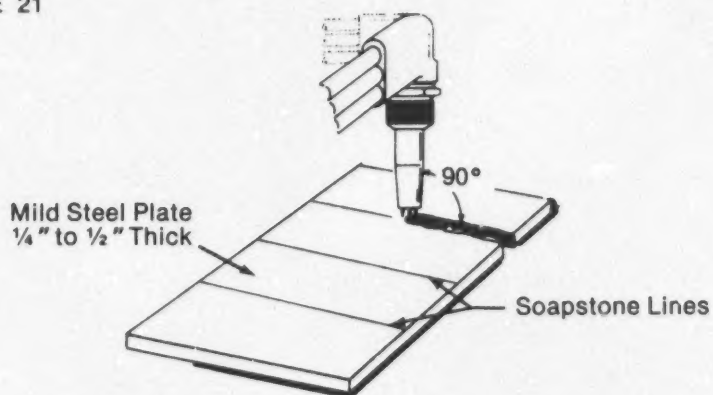
(NOTE: Working pressures depend on tip size and thickness of metal to be cut. Use pressures and tip size recommended by manufacturer.)

JOB SHEET #3

- C. Place plate to be cut over slag box
- D. Light torch (Job Sheet #2)
- E. Adjust to neutral flame (Job Sheet #2)
- F. Place hoses behind you and assume a comfortable position
- G. Maneuver torch with both hands
- H. Hold preheat flame with tip of inner cone $\frac{1}{16}$ inch to $\frac{1}{8}$ inch above top of plate at right edge until red spot appears
- I. Depress oxygen cutting lever, and move from right to left across the plate (Figure 21)

(NOTE: Left-handed operators move from left to right.)

FIGURE 21



- J. While cutting, hold tip at right angle to work, with inner cone $\frac{1}{16}$ inch to $\frac{1}{8}$ inch above work
- K. Make 90-degree cuts until you have developed the proper procedure
- L. Restart a cut
 - 1. Release oxygen cutting lever
 - 2. Preheat only edge where cutting action was stopped
 - 3. Slowly depress oxygen cutting lever and continue cut
 - 4. Repeat procedure until you have developed proper skill

JOB SHEET #3

- M. Turn off flame (Job Sheet #2)
- N. Cool metal by picking up with pliers and placing in can of water
- O. Show work to instructor for approval and grading
- P. After instructor's approval, depressurize oxyacetylene equipment (Job Sheet #1)
- Q. Clean work area and put away equipment and materials

OXY-GAS CUTTING
UNIT IV

JOB SHEET #4 — MAKE A FLAME-BEVELED CUT ON MILD STEEL PLATE

I. Equipment and materials

- A. Cutting outfit with tip assembly
- B. Mild steel plate, $\frac{1}{4}$ inch to $\frac{1}{2}$ inch thick; at least 4 inches wide and 8 inches long
- C. Leather gloves
- D. Shaded welding goggles
- E. Pliers
- F. Coveralls or protective clothing
- G. Flint lighter
- H. Welding or cutting table
- I. Slag box
- J. Can of water
- K. Tip selection guide

II. Procedure

(NOTE: Safety glasses or goggles should be worn in the shop at all times.)

- A. Place piece of mild steel plate on slag box or cutting table
- B. Light cutting torch and adjust to a neutral flame (Job Sheet #2)

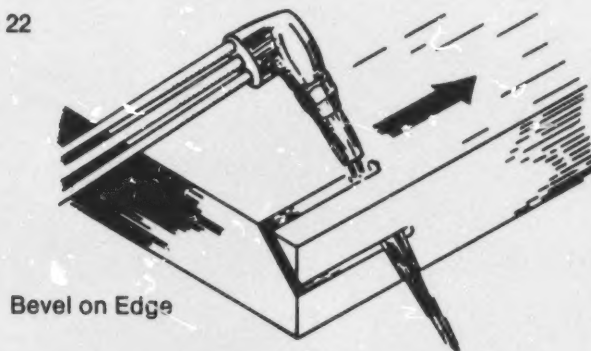
(NOTE: Oxygen cutting pressures are greater for bevel cuts than for 90-degree cuts. Follow manufacturer's recommendations.)

- C. Place hoses behind you and assume a comfortable position

JOB SHEET #4

- D. Hold torch with both hands and at desired angle to metal as shown in Figure 22

FIGURE 22



- E. Hold preheat flame with tip of inner cone (neutral flame) $\frac{1}{16}$ inch to $\frac{1}{8}$ inch above top of plate until bright red spot appears
- F. Depress oxygen cutting lever, and proceed across plate with very consistent movement, being careful to maintain constant travel speed, torch angle, and flame-to-work distance
- G. Practice until you develop the proper procedure
- H. Turn off flame (Job Sheet #2)
- I. Cool metal by picking up with pliers and placing in can of water
- J. Show work to instructor for approval and grading
- K. After instructor's approval, depressurize oxyacetylene equipment (Job Sheet #1)
- L. Clean work area and put away equipment and materials

OXY-GAS CUTTING
UNIT IV

JOB SHEET #5 — CUT A HOLE IN MILD STEEL

I. Equipment and materials

- A. Cutting outfit with tip assembly
- B. Mild steel plate $\frac{1}{4}$ inch to $\frac{1}{2}$ inch thick; at least 4 inches wide and 8 inches long
- C. Soapstone with a sharp point or edge
- D. Leather gloves
- E. Shaded welding goggles
- F. Pliers
- G. Coveralls or protective clothing
- H. Flint lighter
- I. Welding or cutting table
- J. Slag box
- K. Can of water
- L. Tip selection guide

II. Procedure

(NOTE: Safety glasses or goggles should be worn in the shop at all times.)

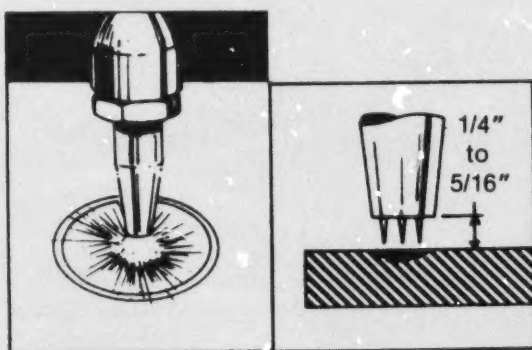
- A. Use soapstone to draw circle on metal approximately 1 inch in diameter and 1 inch from edge
- B. Adjust oxygen regulator
- C. Adjust acetylene regulator
- D. Place metal to be cut over slag box
- E. Light torch (Job Sheet #2)
- F. Adjust to neutral flame (Job Sheet #2)

JOB SHEET #5

- G. Place hoses behind you and assume a comfortable position
- H. Maneuver torch with both hands
- I. Hold tip of inner cone $\frac{1}{16}$ inch to $\frac{1}{8}$ inch above point to be cut until metal turns bright red (Figure 23)

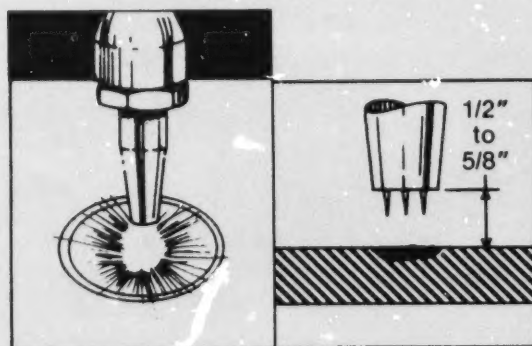
(NOTE: This distance should place the tip end $\frac{1}{4}$ inch to $\frac{5}{16}$ inch from the metal as shown in Figure 23.)

FIGURE 23



- J. Raise tip slightly as molten puddle begins to form (Figure 24)

FIGURE 24

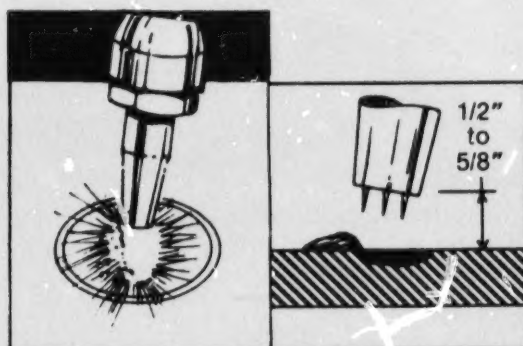


JOB SHEET #5

1. Tilt torch 15 degrees from vertical position (Figure 25)

(NOTE: Tilting the torch allows molten metal to be blown away from operator.)

FIGURE 25



2. Depress oxygen cutting lever slowly, moving torch backwards (to your right if right-handed) until cut pierces plate
- K. Cut just inside soapstone mark until circular cut is completed
 - L. Turn off flame (Job Sheet #2)
 - M. Cool metal by picking up with pliers and placing in can of water
 - N. Show work to instructor for approval and grading
 - O. If additional practice is needed, repeat steps A through N
 - P. After instructor's approval, depressurize oxyacetylene equipment (Job Sheet #1)
 - Q. Clean work area and put away equipment and materials

OXY-GAS CUTTING UNIT IV

TEST

NAME _____

SCORE _____

1. Match to their correct definitions terms associated with oxy-gas cutting. Write the correct numbers in the blanks. Definitions are continued on the next page.

- | | | |
|----------|--|--------------------------|
| _____ a. | Group of cutting processes in which metal is cut by the chemical reaction of oxygen with the base metal at a high temperature produced by a gas flame burned with oxygen | 1. Cylinder valve |
| _____ b. | Portable, round container used to transport and store compressed gas | 2. Soapstone |
| _____ c. | Tool attached to cylinder; controls gas flow at a constant rate; has two gauges, one that shows pressure in cylinder, and one that shows working pressure going to torch | 3. Cylinder |
| _____ d. | Valve installed in top of cylinder to turn on and off the flow of gas from cylinder | 4. Bevel cut |
| _____ e. | Waste by-product of the oxy-gas cutting process; consists of oxidized iron and ashes | 5. Backfire |
| _____ f. | Metal container that contains a layer of water or sand to catch hot slag during cutting operation | 6. Oxy-gas cutting |
| _____ g. | Angled cut on metal; made with cutting torch | 7. Slag |
| _____ h. | Dangerous condition in which flame burns back inside torch body; characterized by a hissing sound and smoke and/or sparks emitted from torch tip | 8. Flashback |
| _____ i. | Condition in which flame momentarily burns back into tip; characterized by a loud snap or pop and the flame either going out or continuing to burn | 9. Regulator |
| _____ j. | Process of forcing gases through the hoses and cutting torch to remove foreign material or impurities | 10. Oxyacetylene cutting |
| | | 11. Purge |
| | | 12. Slag box |
| | | 13. Oxidize |
| | | 14. Combustion |

TEST

- ____k. Most common type of oxy-gas cutting; uses acetylene as the fuel gas
- ____l. Device used to mark metal in all types of metalworking procedures
- ____m. Act or instance of burning
- ____n. To combine with oxygen

2. Identify common types of fuel gases. Write the correct names in the blanks.

Type of Fuel Gas	Flame Temperature with Oxygen	Characteristics	Place and Frequency of Use
a. _____	6300°F	Unstable under pressures over 15 psi Most efficient oxygen consumption as related to flame temperature Distinct odor Colorless	Most common in schools Most versatile for gas welding operations
b. _____	4600°F	Stable Poor oxygen consumption efficiency and low-temperature flame Colorless	Limited industrial use because of its inaccessibility
c. _____	5300°F	Stable Poor oxygen consumption efficiency rating as related to flame temperature Suitable for heating and cutting operations only Distinct odor Colorless	Easily accessible and commonly used on many farms and in rural areas
d. _____	6000°F	Stable Second most efficient oxygen consumption as related to flame temperature Distinct odor Colorless	Increasing use in industry

TEST

3. List the characteristics of oxygen.

- a. _____
- b. _____
- c. _____
- d. _____

4. Identify the functions of oxygen in the cutting process. Write an "X" in the blank before each correct function.

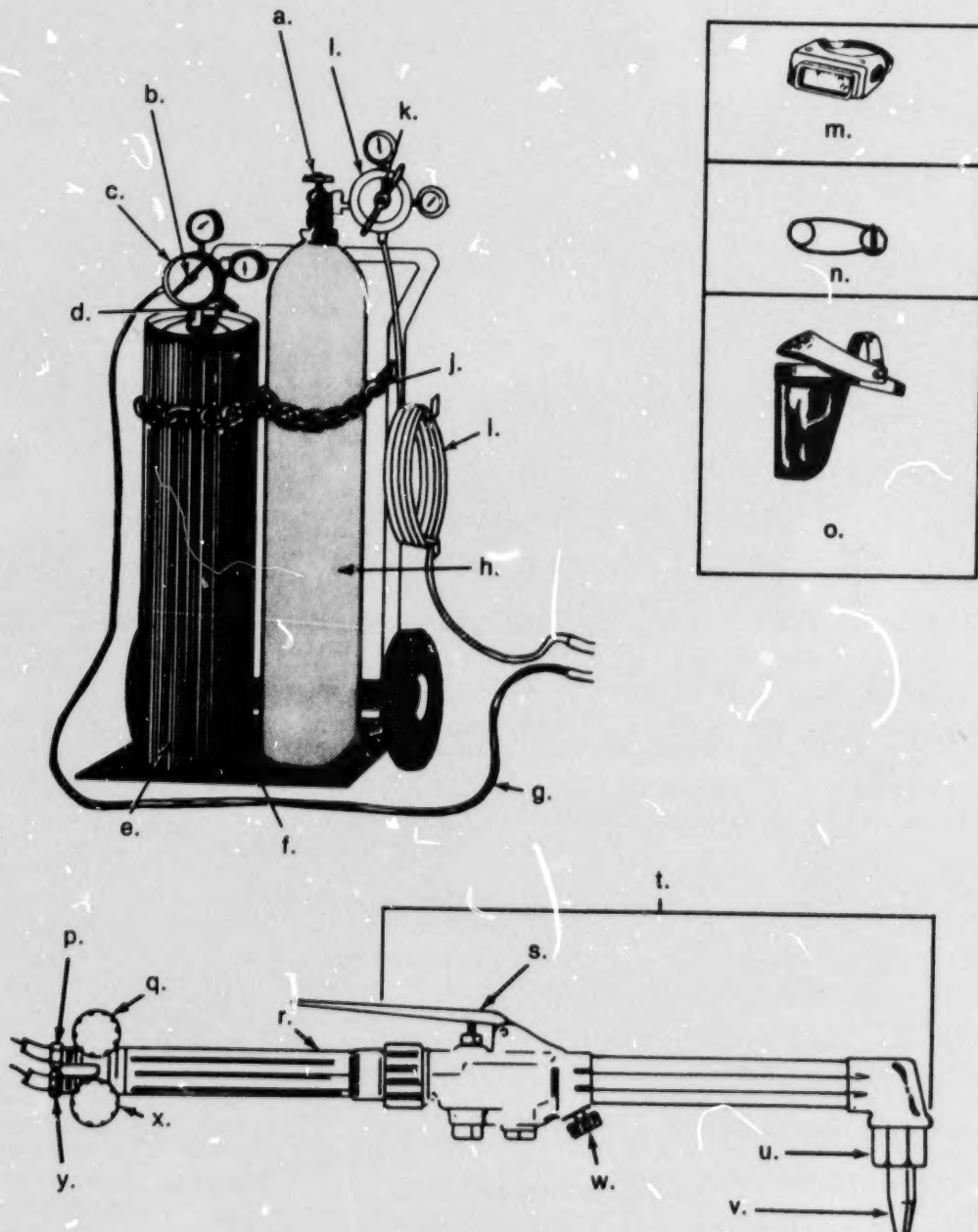
- ____a. Combines with fuel gas to intensify flame temperature
- ____b. Combines with iron in ferrous metals to oxidize iron
- ____c. Flows across metal to quickly cool molten puddle
- ____d. Blows out melted metal to speed cutting process
- ____e. Helps to make clean cuts because of purity of oxygen

5. Identify the parts of the oxy-gas cutting equipment illustrated on the following page. Write the correct names in the corresponding blanks on the page following the illustration.

Oxygen cylinder valve
 Oxygen regulator
 Acetylene regulator
 Acetylene cylinder valve
 Acetylene cylinder
 Safety chain
 Oxygen cylinder
 Cylinder truck
 Oxygen cutting lever
 Oxy-gas welding and cutting goggles
 Tip
 Flint lighters
 Shaded face shield
 Oxygen hose

Oxygen fitting (right-hand threads)
 Cutting attachment
 Oxygen torch valve
 Torch body
 Acetylene fitting (grooved nut, left-hand threads)
 Acetylene torch valve
 Tip nut
 Oxygen preheat valve
 Acetylene hose
 Oxygen pressure regulating screw
 Acetylene pressure regulating screw

TEST



TEST

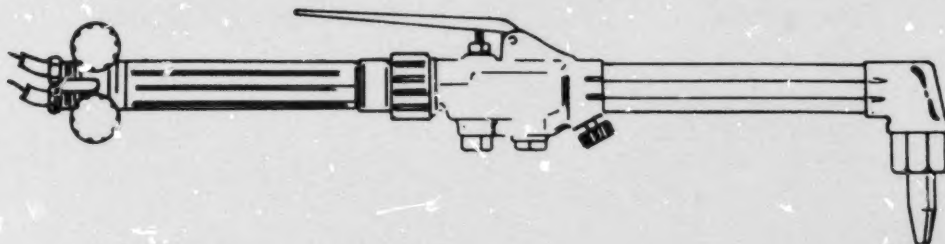
- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____
- g. _____
- h. _____
- i. _____
- j. _____
- k. _____
- l. _____
- m. _____
- n. _____
- o. _____
- p. _____
- q. _____
- r. _____
- s. _____
- t. _____
- u. _____
- v. _____
- w. _____
- x. _____
- y. _____

TEST

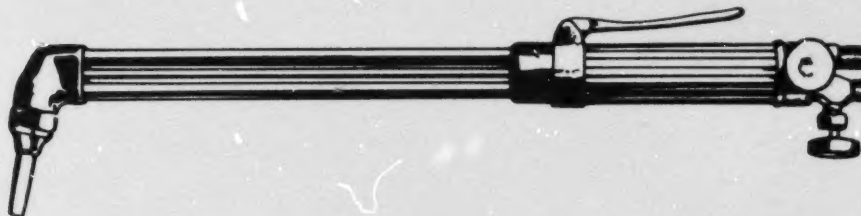
6. Identify types of cutting torches. Write the correct names in the blanks.

Single-unit cutting torch

Two-piece cutting torch assembly



a. _____



b. _____

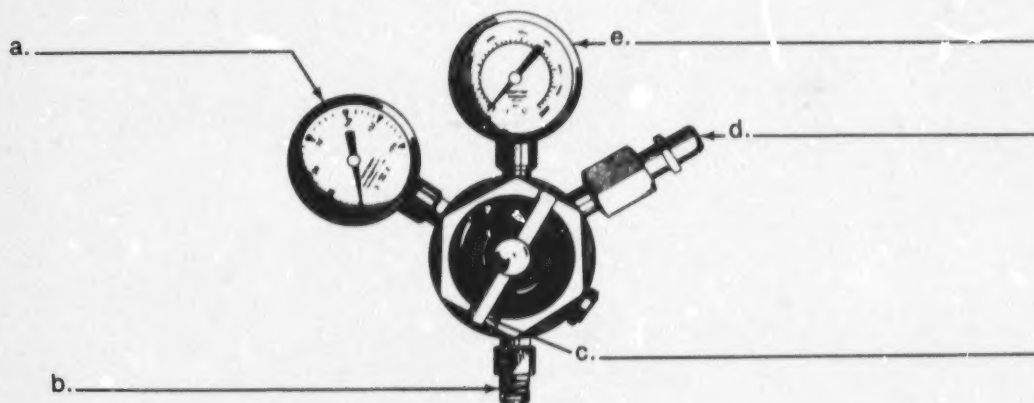
TEST

7. Identify the parts of the oxyacetylene regulators illustrated. Write the correct names in the blanks.

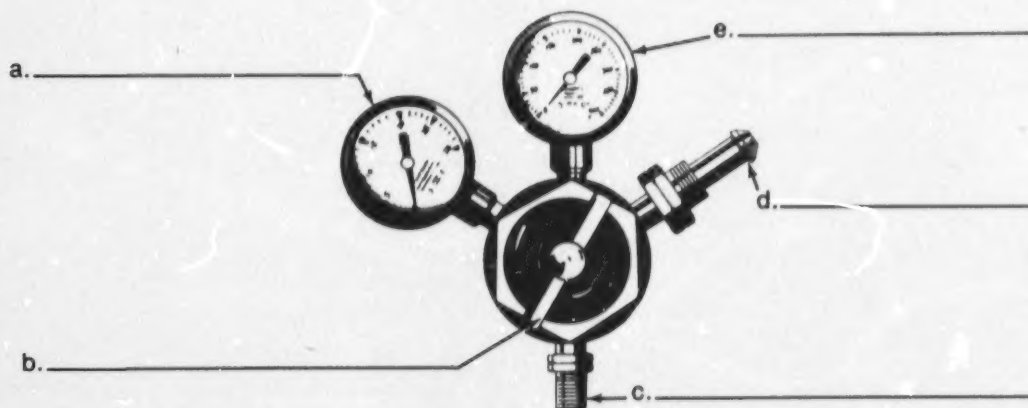
Working pressure gauge (0 to 150 psi)
 Cylinder pressure gauge (0 to 3000 psi)
 Oxygen cylinder inlet fitting
 Oxygen hose outlet fitting
 (right-hand threads)
 Oxygen regulator adjusting
 screw

Cylinder pressure gauge (0 to 400 psi)
 Acetylene cylinder inlet fitting
 Acetylene hose outlet fitting
 (left-hand threads)
 Acetylene regulator adjusting screw
 Working pressure gauge (0 to 300 psi)

Oxygen regulator



Acetylene regulator



TEST

8. State six safety precautions for handling oxy-gas equipment.

- a. _____

- b. _____

- c. _____

- d. _____

- e. _____

- f. _____

9. Name the components of a fire triangle.

- a. _____
- b. _____
- c. _____

10. Match types of oxyacetylene flames to their correct descriptions. Write the correct numbers in the blanks.

- | | | |
|----------|---|----------------------|
| _____ a. | Has excess acetylene gas in flame; shows acetylene feather burring around inner cone; burns extra acetylene, thus causing metal to become brittle | 1. Oxidizing flame |
| _____ b. | Has sharp inner cone; does not show acetylene feather; burns equal parts of gases from cylinders | 2. Carburizing flame |
| _____ c. | Has excess oxygen in flame; has short inner cone, and makes whistling sound; burns metal, causing it to become brittle | 3. Neutral flame |

TEST

11. List the causes of backfire.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____

12. Arrange in order the steps to follow in case of flashback. Write a "1" before the first step, a "2" before the second step, and so on.

- ____a. Release oxygen regulator screw
- ____b. Close oxygen torch valve
- ____c. Light torch
- ____d. Release fuel-gas regulator screw
- ____e. Close oxygen preheat valve
- ____f. Examine fuel-gas unit
- ____g. Close fuel-gas torch valve
- ____h. Reset regulator pressures

(NOTE: Test question 13 lists the job sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

13. Demonstrate the ability to

- a. Set up, test for leaks, and depressurize oxyacetylene equipment.
- b. Turn on, light, adjust cutting torch to a neutral flame, and turn off oxyacetylene cutting equipment.
- c. Make 90-degree cuts on mild steel and restart a cut.
- d. Make a flame-beveled cut on mild steel plate.
- e. Cut a hole in mild steel.

OXY-GAS CUTTING
UNIT IV

ANSWERS TO TEST

- | | | | | |
|----|----|----|----|----|
| 1. | a. | 6 | h. | 8 |
| | b. | 3 | i. | 5 |
| | c. | 9 | j. | 11 |
| | d. | 1 | k. | 10 |
| | e. | 7 | l. | 2 |
| | f. | 12 | m. | 14 |
| | g. | 4 | n. | 13 |
- 2.
- a. Acetylene
 - b. Natural
 - c. Propane
 - d. Mapp
- 3.
- a. Colorless
 - b. Odorless
 - c. Tasteless
 - d. Supports and intensifies combustion
4. a, b, d
- 5.
- a. Oxygen cylinder valve
 - b. Acetylene pressure regulating screw
 - c. Acetylene regulator
 - d. Acetylene cylinder valve
 - e. Acetylene cylinder

ANSWERS TO TEST

- f. Cylinder truck
 - g. Acetylene hose
 - h. Oxygen cylinder
 - i. Oxygen hose
 - j. Safety chain
 - k. Oxygen pressure regulating screw
 - l. Oxygen regulator
 - m. Oxy-gas welding and cutting goggles
 - n. Flint lighter
 - o. Shaded face shield
 - p. Oxygen fitting (right-hand threads)
 - q. Oxygen torch valve
 - r. Torch body
 - s. Oxygen cutting lever
 - t. Cutting attachment
 - u. Tip nut
 - v. Tip
 - w. Oxygen preheat valve
 - x. Acetylene torch valve
 - y. Acetylene fitting (grooved nut, left-hand threads)
-
- 6. a. Two-piece cutting torch assembly
 - b. Single-unit cutting torch

ANSWERS TO TEST

7. **Oxygen regulator**

- a. Working pressure gauge (0 to 150 psi)
- b. Oxygen hose outlet fitting (right-hand threads)
- c. Oxygen regulator adjusting screw
- d. Oxygen cylinder inlet fitting
- e. Cylinder pressure gauge (0 to 3000 psi)

Acetylene regulator

- a. Working pressure gauge (0 to 30 psi)
- b. Acetylene regulator adjusting screw
- c. Acetylene hose outlet fitting (left-hand threads)
- d. Acetylene cylinder inlet fitting
- e. Cylinder pressure gauge (0 to 400 psi)

8. Answer should include any six of the following

- a. Before attaching regulators, blow out cylinder valve by opening and closing valve quickly
- b. Before opening cylinder valves, check to make sure that adjusting screws on regulators are loose
- c. Stand to one side of regulator when opening cylinder valve
- d. Open cylinder valve slowly to prevent explosions
- e. Do not use or compress acetylene (in free state) at pressures greater than 15 pounds per square inch (psi)
- f. Purge oxygen and fuel-gas passages individually before lighting torches
- g. Light fuel gas before opening oxygen valve on torch
- h. Never use oil or grease on regulators, torches, fittings, or other equipment in contact with oxygen
- i. Never use oxygen as a substitute for compressed air

ANSWERS TO TEST

- j. Keep combustible materials away from cutting areas
 - k. Always wear leather welding and cutting gloves
 - l. Wear oxy-gas welding and cutting goggles
 - m. Wear protective clothing to protect all parts of the body
 - n. Never cut containers that have been used for combustible materials
 - o. Avoid breathing toxic fumes when cutting
 - p. Always place steel caps on cylinders when they are being moved or are in storage
 - q. Always use flint lighter to light torch
 - r. Always protect hoses from hot slag, hot metal, or mechanical damage
 - s. Always operate torch in a well-ventilated area
 - t. Always support or store cylinders in an upright position
9. a. Heat
- b. Oxygen
- c. Fuel
10. a. 2
- b. 3
- c. 1
11. a. Insufficient pressure of fuel gas or oxygen
- b. Loose cutting tip
- c. Dirty tip
- d. Overheating of cutting tip caused by bringing tip too close to molten puddle
- e. Bad O-ring in torch body
- f. Too large a tip used in conjunction with small fuel-gas cylinder

ANSWERS TO TEST

- | | | | | |
|-----|----|---|----|---|
| 12. | a. | 4 | e. | 2 |
| | b. | 3 | f. | 6 |
| | c. | 8 | g. | 1 |
| | d. | 5 | h. | 7 |

13. Performance skills evaluated to the satisfaction of the instructor